

EXHIBIT 7

Wapp Tech Limited Partnership et al. v. JPMorgan Chase Bank, N.A., No. 4:23-cv-1137 (E.D. Tex.)

EXHIBIT E-4c

Invalidity of U.S. Patent No. 10,691,579 Based on the Flash MX Professional 2004 System

As described in the following claim chart, claims 15–20, 26–29, 33, and 34 of U.S. Patent No. 10,691,579 (the '579 patent) are invalid because they are anticipated under 35 U.S.C. § 102 by the Flash MX Professional 2004 system and/or would have been obvious under 35 U.S.C. § 103 over the Flash MX Professional 2004 system and/or the knowledge of a person of ordinary skill in the art ("POSA").

The Flash MX Professional 2004 software product was publicly released by Macromedia, Inc., no later than September 10, 2003. Manuals and other publications describing Flash MX Professional 2004 were concurrently available. The i-mode HTML Simulator feature was concurrently available, and instructions for downloading and using the feature were concurrently available and provided with Flash MX Professional 2004. A software update for Flash MX Professional 2004, adding Flash Lite 1.1 functionality, was publicly released by Macromedia, Inc., no later than June 26, 2004. Manuals and other publications describing Flash Lite 1.1 were concurrently available. Under the EDTX Model Order Focusing Patent Claims and Prior Art to Reduce Costs, "associated references that describe that instrumentality shall count as one reference, as shall the closely related work of a single prior artist." (EDTX Model Order Focusing Patent Claims and Prior Art to Reduce Costs, at 1 n.1.) The following associated references all describe the Flash MX Professional 2004 instrumentality and, therefore, together with the software product itself collectively count as one reference ("Flash MX Professional 2004 system" or "Flash MX Professional 2004"):

- *Flash MX 2004 Using Flash*, copyright Macromedia, Inc., dated September 2003, provided with the software product and concurrently published at <http://www.macromedia.com/support/documentation/en/flash/> ;
- *Flash MX 2004 Getting Started with Flash*, copyright Macromedia, Inc., dated September 2003, provided with the software product and concurrently published at <http://www.macromedia.com/support/documentation/en/flash/> ;
- *Flash MX Professional 2004 Flash Lite Authoring Guidelines for the i-mode Service by NTT DoCoMo*, copyright Macromedia, Inc., dated March 2003, provided with the software product and concurrently published at <http://www.macromedia.com/support/documentation/en/flash/> ;
- *Flash MX Professional 2004 Flash Lite User Guide*, copyright Macromedia, Inc., dated August 2003, provided with the software product and concurrently published at <http://www.macromedia.com/support/documentation/en/flash/> ;
- Bill Perry, *New Features for Mobile and Devices Developers in Macromedia Flash MX Professional 2004* ("Perry"), published by Macromedia, Inc., no later than September 9, 2003, concurrently with and on the same website as the software product;
- Matthew David, *Building Great Flash MX Games* ("David"), copyright date 2003;
- *Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines*, copyright Macromedia, Inc., dated June 2004 and concurrently published at <http://www.macromedia.com/support/documentation/en/flash/> .

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Because the Flash MX Professional 2004 software product with its Flash Lite 1.1 update was released no later than June 2004, the Flash MX Professional 2004 system qualifies as prior art at least under pre-AIA 35 U.S.C. §§ 102(a) and (b) based on Wapp's earliest claimed priority date of June 10, 2005 (the date of Provisional Application No. 60/689,101). As set forth in Defendant's ("JPMC's") accompanying invalidity contention cover pleading, the Flash MX Professional 2004 system is prior art under pre-AIA 35 U.S.C. §§ 102(a) and (b) if it is determined that this asserted patent is entitled to a priority date of June 9, 2006 (the filing date of U.S. Patent App. No. 7,813,910). The Flash MX Professional 2004 system additionally qualifies as prior art at least under pre-AIA 35 U.S.C. § 102(f). The named inventor of the asserted patent admitted possessing prior knowledge of Flash and related technologies, including Flash Lite 1.1, Flash MX, Flash MX Professional 2004, and Studio 8, from Macromedia, Inc., as demonstrated in at least the Provisional Application No. 60/689,101 and U.S. Patent App. No. 7,813,910 and associated prior art disclosures, and in prior deposition testimony. Wapp also admits that the named inventor of the asserted patent possessed prior knowledge of Flash technology and in particular that the purported invention was a purported improvement on Macromedia's Flash development environment, as demonstrated at least in Wapp's response on May 8, 2024, to JPMC's interrogatory number 8.

To the extent the Flash MX Professional 2004 system does not expressly or inherently disclose one or more of the limitations of the claims, such limitations would have been obvious in view of the teachings of the Flash MX Professional 2004 system in combination with the knowledge of a POSA and/or one or more of the references identified in JPMC's Invalidity Contentions.

JPMC notes that obviousness analysis involves an expansive and flexible approach that takes into account the background knowledge, creativity, and common sense of a POSA. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418, 421 (2007). Accordingly, JPMC reserves the right to supplement these statements of obviousness based on further discovery and developments in this case, such as the Court's claim construction.

The chart below provides representative examples of where each element of each claim is found in the referenced prior art. Citations are meant to be exemplary, not exhaustive, and JPMC reserves the right to identify and discuss additional portions of the referenced prior art in support of its contentions and/or to rebut arguments made by Wapp. Citations to figures, drawings, tables, and the like include reference to any accompanying or related text. All internal cross references are meant to incorporate the cross-referenced material as if fully set forth therein.

Wapp's Infringement Contentions have not established that JPMC infringes any valid claim. Thus, JPMC's statements below should not be treated as an admission, implication, or suggestion that JPMC agrees with Wapp regarding either the scope, construction, or interpretation of any of the claims, or the infringement theories advanced by Wapp in its Infringement Contentions, including whether any claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, JPMC specified non-limiting examples of where its application of the prior art is based on Wapp's apparent application of the claim limitation in the Infringement Contentions. These statements are not

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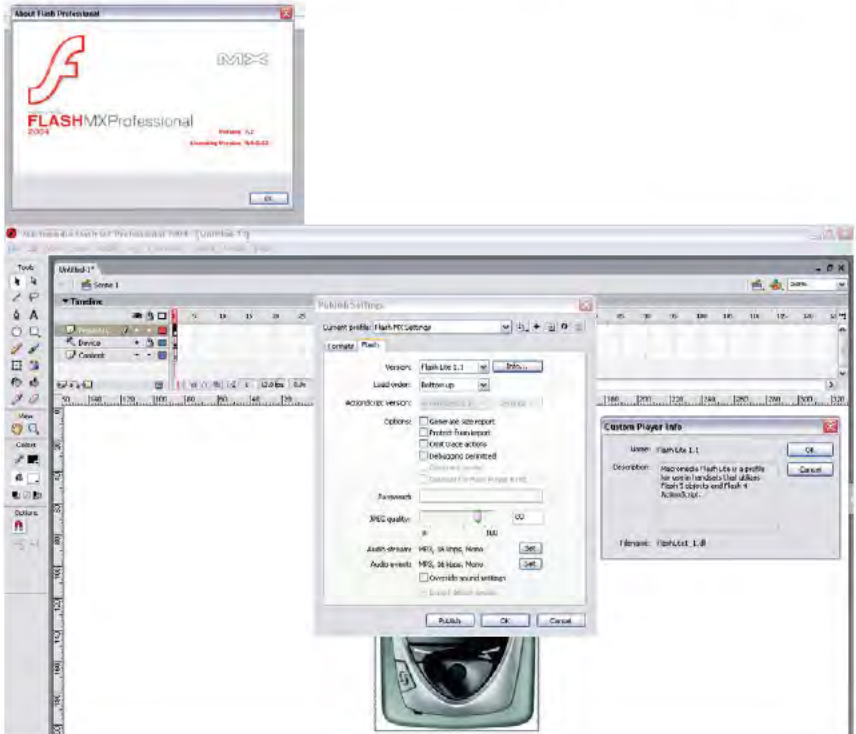
intended to suggest that JPMC agrees with Wapp's application of any claim term. The Court has not yet construed any disputed terms and, therefore, these invalidity contentions take into account all possible constructions. JPMC reserves the right to supplement these contentions after receiving the Court's claim construction or any Court ruling or change of position by Wapp on the priority dates to which Wapp is entitled.

Wapp has yet to identify in this case, any limitation of the claims that it contends is not anticipated and/or rendered obvious by the referenced documents, and/or knowledge of a POSA. JPMC therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness citations and/or combinations, if Wapp makes any such contentions.

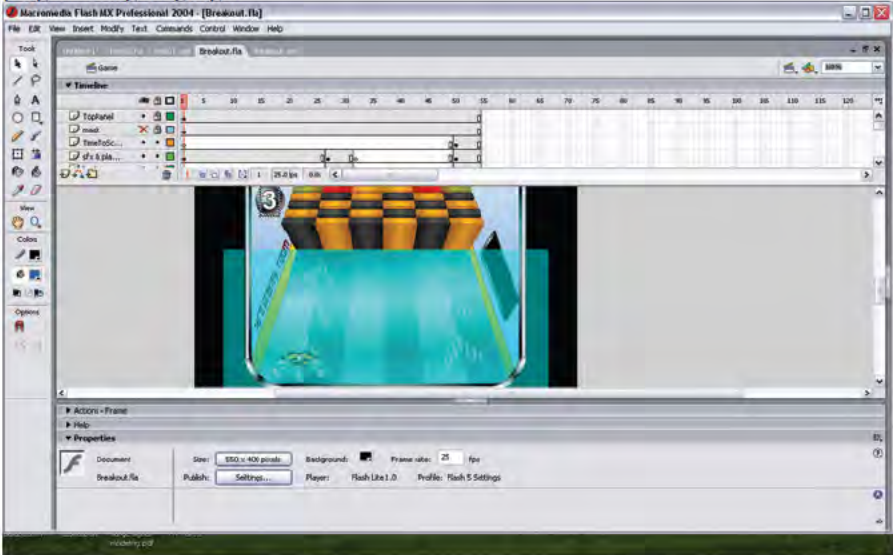
JPMC takes no position in these Invalidity Contentions on whether the preamble of each independent claim is limiting. To the extent each is limiting, the chart below provides examples of where each preamble limitation is found in this prior art.

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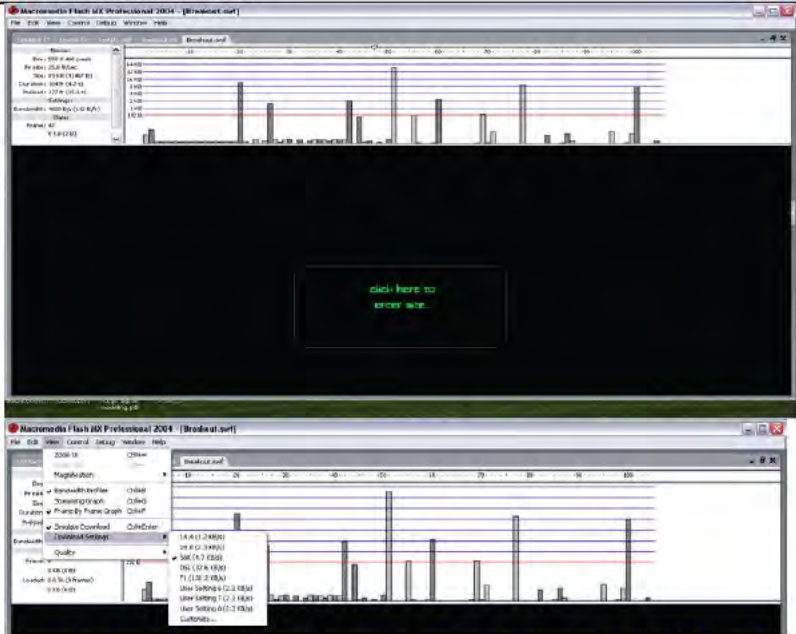
'579 patent

'579 Claim 15	Reference/Combination
<p>15[a] A non-transitory, computer-readable medium comprising software instructions for developing an application to be run on a mobile device, wherein the software instructions, when executed, cause a computer to</p>	<p>The Flash MX Professional 2004 system discloses this limitation.</p> <p>For example, the following are screenshots from Flash MX Professional 2004.</p> 


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*579 Claim 15	Reference/Combination
	<p>Flash MX Professional 2004 with Flash Lite 1.1 update and NTT DoCoMo i-mode simulator 7.2 feature. Flash MX Professional 2004 is a system for developing and testing an application for a mobile device, and it can publish Flash applications to “handsets” (see above window entitled “Custom Player Info”).</p> <p>For example, Flash MX Professional 2004 enables a user to write code to develop visual applications such as animated games using the Flash MX Professional 2004 interface, which consists of at least a stage for imagery and a grid for a timeline. Flash MX Professional 2004 also enables the use of ActionScript, a programming language.</p> 

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*579 Claim 15	Reference/Combination
	 <p>Above is a screenshot of the software authoring interface of Flash MX Professional 2004 using Breakout.fla and Breakout.swf from Flash MX 2004 Games by Nik Lever.</p>

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*579 Claim 15	Reference/Combination
	 <p>The screenshot displays the Macromedia Flash MX Professional 2004 software interface. The main workspace shows a dark stage with a green 'action' button. The 'Actions - Frame' window is open, showing the following ActionScript code:</p> <pre> onClipEvent(MouseEvent.CLICK) { gotoAndPlayFromFrame(1); } </pre> <p>The 'Properties' window on the left shows the 'Frame' property set to '1' and 'Frame 1' selected. The 'Timeline' window on the right shows a single frame labeled 'Frame 1'.</p> <p>Screenshot of Flash MX Professional 2004 interface with “Actions – Frame” window enabling editing ActionScript scripts within the Flash application.</p> <p>For example, Flash MX Professional 2004 was provided on a CD (non-transitory, computer-readable medium comprising software instructions) and alternatively as a downloadable file intended for storage on a hard drive or other storage medium (non-transitory, computer-readable medium comprising software instructions).</p> <p>[Flash MX 2004 Getting Started with Flash, p. 14]</p>

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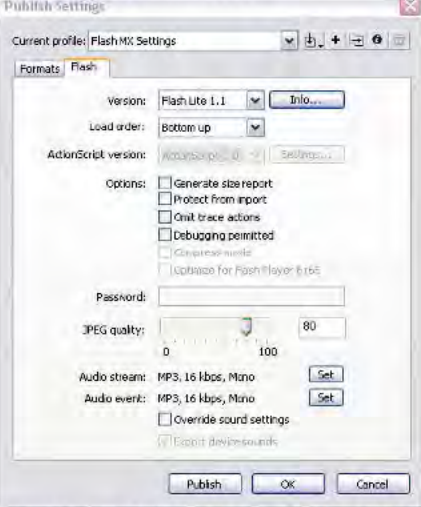
*579 Claim 15	Reference/Combination
	<p>Do one of the following to start the installation process: [¶] (Windows) If you have a CD, insert it in your CD drive. A Flash movie plays that guides you through installation choices. [...] If you have downloaded Flash from the Internet, double-click FlashMX2004Installer.exe (Windows), or double-click the Installer icon (Macintosh) and follow the onscreen instructions.</p> <p>For example, Flash MX Professional 2004 is software installed on the user's computer. Intrinsic to software installation is a non-transitory, computer-readable medium comprising software instructions.</p> <p>[Flash MX 2004 Using Flash, p. 178] You can install the FLV Export plug-in after installation of Flash MX Professional 2004 is complete.</p> <p>For example, Flash MX Professional 2004 comprises software instructions for developing an application to be run on a mobile device.</p> <p>[Flash MX 2004 Using Flash, p. 390] Flash content is viewable across multiple browsers, platforms, and mobile phones. You can author the following:</p> <ul style="list-style-type: none"> • High-quality animations • Games • Rich-media custom user interfaces for devices and desktop systems • Immersive e-commerce and business solutions [¶] <p>In addition, Flash files are compact, making them perfect for wireless carrier networks, where transfer rates range between 9.6 and 60 kilobytes per second (Kbps). Mobile devices, unlike desktop computers, have limited storage capability, so the small footprint of Flash is ideal. [¶]</p> <p>The mobile device templates let you create content for many mobile devices available today. Use the device skins in the templates to preview your content as it will look on the device. [¶] Note: The skins are on guide</p>

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*579 Claim 15	Reference/Combination
	<p>layers and won't export with your content or appear at runtime. [¶] For more information on authoring Flash files for mobile devices, please visit the Macromedia Mobile Devices site at www.macromedia.com/devnet/devices/.</p> <p>[Flash MX 2004 Using Flash, p. 39] Close the test window to return to the normal authoring environment. [¶] Once you've set up a test environment incorporating the Bandwidth Profiler, you can open any SWF file directly in test mode. The file opens in a Flash Player window, using the Bandwidth Profiler and other selected viewing options.</p> <p>[Flash MX Professional 2004 Flash Lite User Guide, p. 5] Macromedia has created a new Flash Player version, called Macromedia® Flash™ Lite, that runs on a new class of consumer mobile devices. This format is designed to run optimally on devices with limited resources (memory, processor speed, display area). [...] With Macromedia Flash MX Professional 2004, you can author, preview, publish, and validate content for Flash Lite.</p> <p>[Flash MX 2004 Using Flash, p. 18] ActionScript is the Flash scripting language that enables you to add complex interactivity, playback control, and data display to a Flash document. You can add ActionScript within the Flash authoring environment using the Actions panel [...]</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>
15[b] select one or more characteristics associated with a mobile device:	The Flash MX Professional 2004 system discloses this limitation.

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*579 Claim 15	Reference/Combination
	 <p>Screenshot of Flash MX Professional 2004 showing selecting at least the Flash Player version.</p> <p>For example, Flash MX Professional 2004 selects a Flash Player version. A mobile device may support one or more versions of Flash Player, so a Flash Player version is a characteristic associated with a mobile device.</p> <p>[<i>Flash MX 2004 Using Flash</i>, p. 282]</p> <p>Click the Flash tab and select a Player version from the Version pop-up menu. Not all Macromedia Flash MX 2004 and Macromedia Flash MX Professional 2004 features work in published SWF files that target Flash Player versions earlier than Flash Player 7. If you want to specific Flash Player detection, on the HTML tab of the Publish Settings dialog box, you must select Flash Player 4 or a later version. For more information about Flash Player detection, see “Configuring publish settings for Flash Player detection” on page 287.</p>

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*579 Claim 15	Reference/Combination
	<p>[Flash MX 2004 Using Flash, p. 287] You can configure your document to detect your users' Flash Player version. If you've selected Detect Flash Version in the Publish Settings dialog box, users who access your Flash application are transparently directed to an HTML file that contains a SWF file designed to detect their Flash Player version. If they have the specified version or later, the SWF file again redirects the user to your content HTML file, and your SWF file plays as designed. If users don't have the specified version, they're redirected to an alternate HTML file that Flash creates, or that you've created.</p> <p>[Perry] New Features for Mobile and Devices Developers [¶] Both products offer the new mobile devices templates, however, only Macromedia Flash MX Professional 2004 provides functionality specific to mobile device development: Mobile devices templates MIDI ring tone support Test device emulators Alias text support [¶]</p> <p>In the following section, I'll give you a little more information about these new features and what they mean to you. [¶]</p> <p>Authoring Content for Devices [¶] Exporting Content for Various Versions of Macromedia Flash Player [¶] When authoring for mobile devices, you need to use the correct Macromedia Flash publish settings based on the Macromedia Flash Player requirements of your target device. For more information on some of the devices that play Macromedia Flash content, refer to the Mobile and Devices Developer Center for a list of devices and content development kits for each. [¶]</p> <p>To customize your Macromedia Flash publish settings, you can select an option from the Flash tab of the Publish Settings window. You can access this window in three different ways: Select File > Publish Settings. Press the Settings button on the Property inspector with the Stage selected. Use a keyboard shortcut: Control-Shift-F12. [¶]</p>

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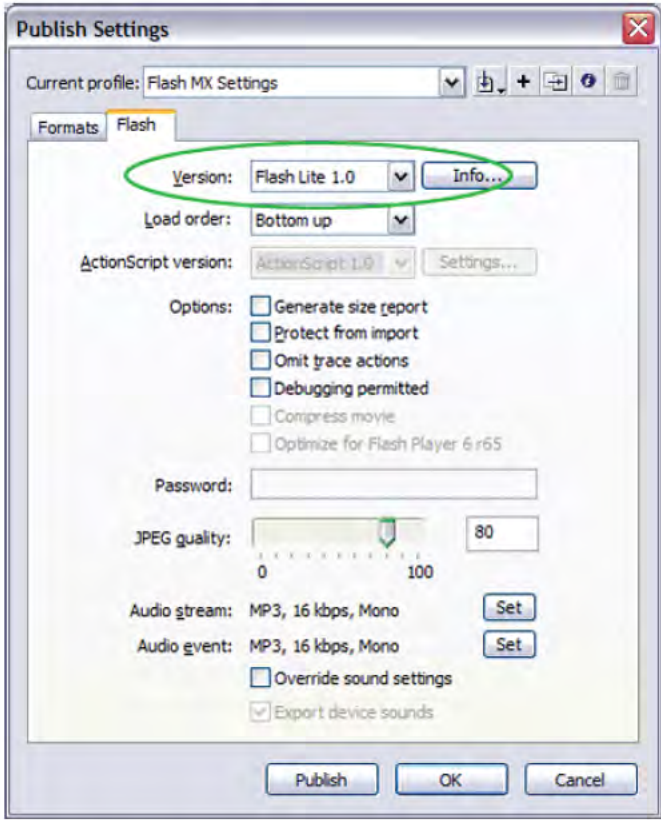
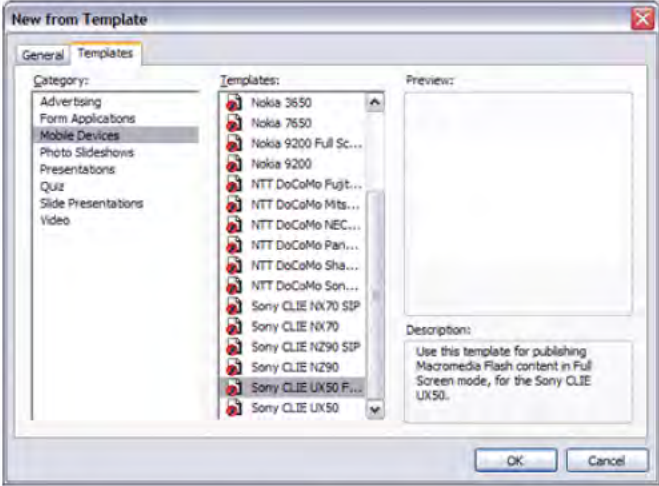

*579 Claim 15	Reference/Combination
	<div data-bbox="376 625 1032 1440">The image shows the 'Publish Settings' dialog box from Macromedia Flash. The 'Flash' tab is selected. The 'Current profile' is 'Flash MX Settings'. The 'Version' is set to 'Flash Lite 1.0', which is circled in green. The 'Load order' is 'Bottom up'. The 'ActionScript version' is 'ActionScript 1.0'. There are several options: 'Generate size report', 'Protect from import', 'Omit trace actions', 'Debugging permitted', 'Compress movie', and 'Optimize for Flash Player 6 r65'. The 'Password' field is empty. The 'JPEG quality' is set to 80. The 'Audio stream' and 'Audio event' are both set to 'MP3, 16 kbps, Mono'. There are 'Set' buttons for each audio setting. The 'Override sound settings' checkbox is unchecked, and the 'Export device sounds' checkbox is checked. At the bottom are 'Publish', 'OK', and 'Cancel' buttons.</div>

Figure 2. Macromedia Flash publish settings. [¶]

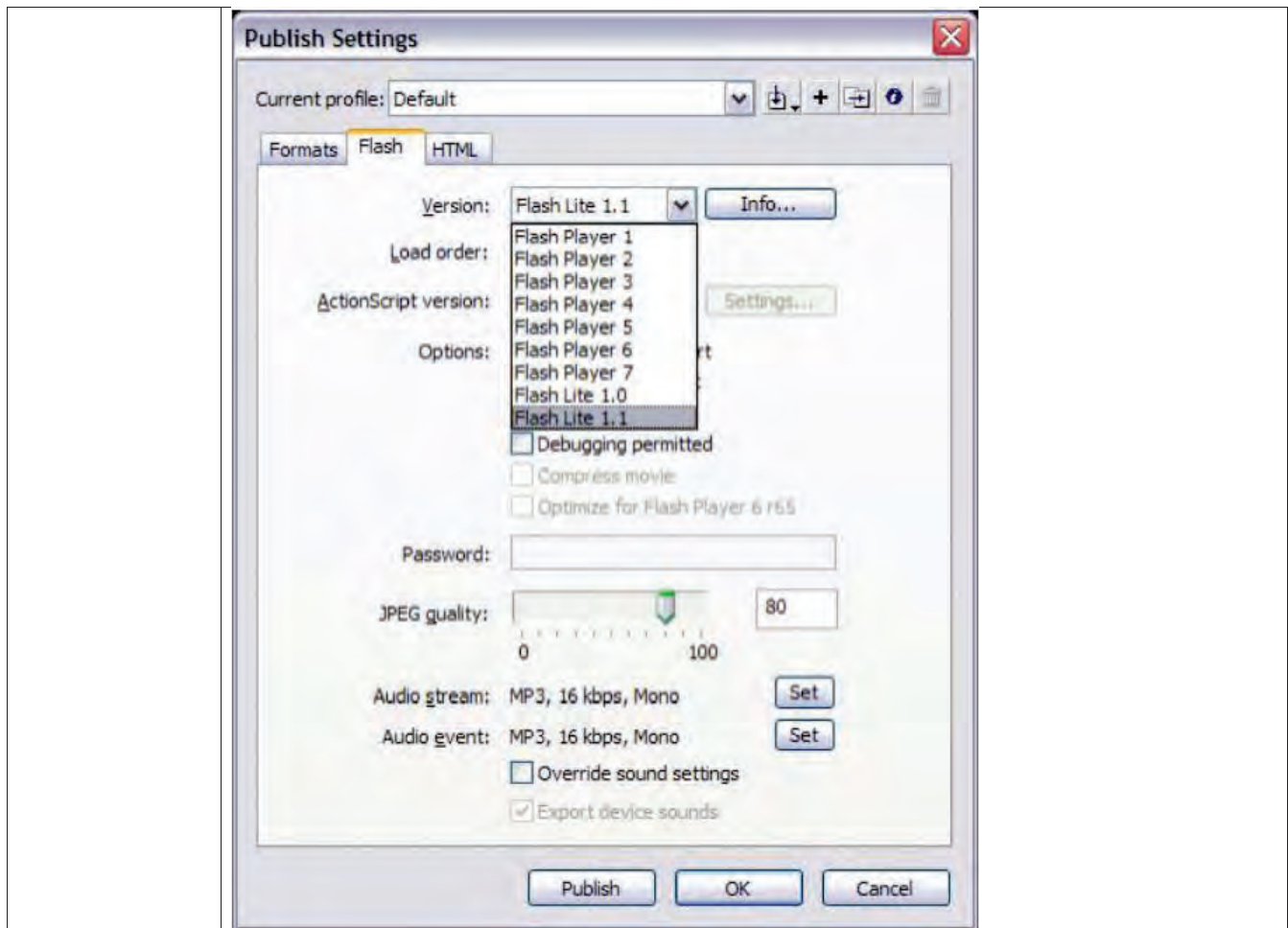
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*579 Claim 15	Reference/Combination
	<p>If you're using the built-in templates for devices, then Flash presets the Flash Player publish settings for each device. However, if you're not using the templates, then you'll need to be ensure that you customize the settings for your device. [¶] The only setting you need to change is the Version setting. Select the proper version of Macromedia Flash Player in the pop-up menu. The rest of the settings are optional and you can refer to the Flash MX Professional 2004 Help panel for additional information on them. [...]</p> <p>Device Templates [¶] New to Macromedia Flash MX Professional 2004 and Macromedia Flash MX 2004 are 22 templates you can use to create content for all of the currently supported mobile devices. You can access them from the Flash start page or by selecting File > New. Click the Template tab in the New from Template dialog box (Figure 6) and select Mobile Devices in the Category pane. [¶]</p>  <p>Figure 6. Mobile Devices templates. [¶]</p>

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*579 Claim 15	Reference/Combination
	<p>These templates take the guess work out of developing Macromedia Flash content for specific platforms. They set the correct stage size, load a full-size image of the specific device in a guide layer, and preset the correct Flash publishing settings. All you need to do is to create the content based on the development kit recommendations for each platform. You can find content development kits for each platform in the Macromedia Mobile and Devices Developer Center. [¶]</p> <p>For example, if you open up the iPAQ 5440 Full Screen template, here's what you will see: [¶]</p>  <p>Figure 7. iPAQ 5440 Full Screen template opened in the authoring environment. [¶]</p> <p>Be sure to use these templates when creating content for mobile devices—they'll definitely save you time.</p> <p>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, p. 24]</p>

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'579 Claim 15	Reference/Combination
	<p>For example, Flash MX Professional 2004 selects a frame rate and stage size (screen size), both characteristics associated with a mobile device.</p> <p>[<i>Flash MX 2004 Using Flash</i>, p. 10]</p> <p>2. For Frame Rate, enter the number of animation frames to be displayed every second. For most computer-displayed animations, especially those playing from a website, 8 fps (frames per second) to 12 fps is sufficient (12 fps is the default frame rate). [¶] 3. For Dimensions, do one of the following: [¶] ■ To specify the Stage size in pixels, enter values in the Width and Height text boxes. The default document size is 550 x 400 pixels. The minimum size is 1 x 1 pixels; the maximum is 2880 x 2880 pixels.</p> <p>For example, Flash MX Professional 2004 selects a modem speed and typical Internet performance (bandwidth information).</p> <p>[<i>Flash MX 2004 Using Flash</i>, pp. 38–39]</p> <p>The Flash Player attempts to meet the frame rate you set; the actual frame rate during playback can vary on different computers. If a document that is downloading reaches a particular frame before the frame's required data has downloaded, the document pauses until the data arrives. [¶]</p> <p>To view downloading performance graphically, you can use the Bandwidth Profiler, which shows how much data is sent for each frame according to the modem speed you specify. The Bandwidth Profiler is divided into two panes. The left pane shows information about the document, the download settings, the state, and streams, if any are included. The right pane shows information about individual frames in the document. [¶]</p> <p>In simulating the downloading speed, Flash uses estimates of typical Internet performance, not the exact modem speed. For example, if you choose to simulate a modem speed of 28.8 Kbps, Flash sets the actual rate to 2.3 Kbps to reflect typical Internet performance. The profiler also compensates for the added compression support for SWF files, which reduces the file size and improves streaming performance. [¶]</p>

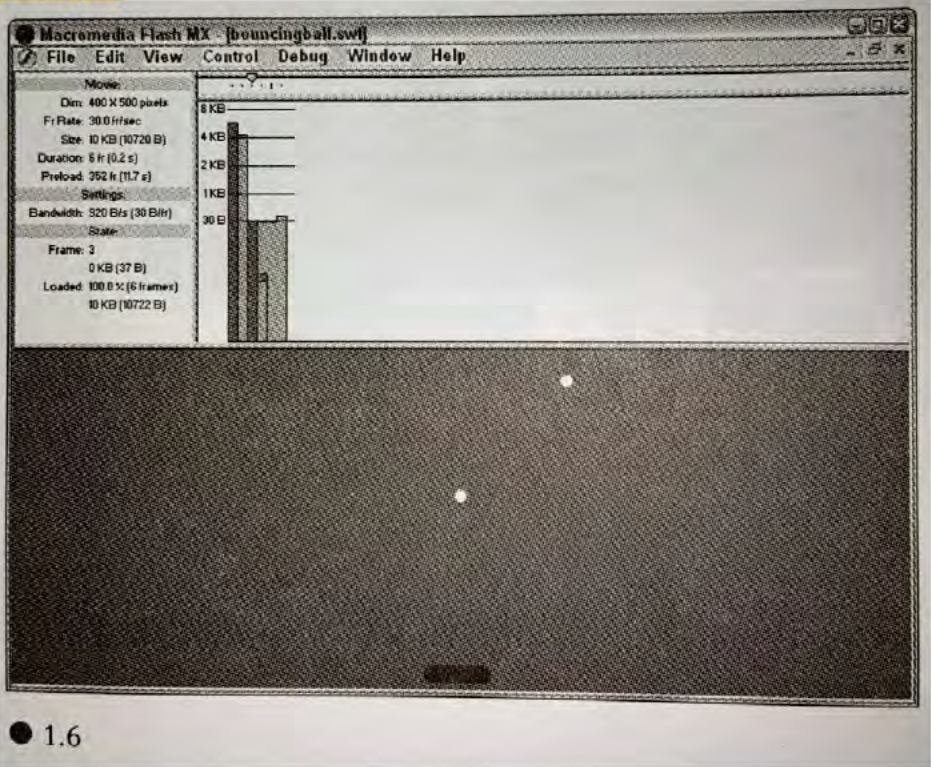
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579 Claim 15	Reference/Combination
	<p>When external SWF files, GIF and XML files, and variables are streamed into a player by using ActionScript calls such as loadMovie and getUrl, the data flows at the rate set for streaming. The stream rate for the main SWF file is reduced based on the reduction of bandwidth caused by the additional data requests. It's helpful to test your document at each speed you intend to support, and on each computer you intend to support. This helps you ensure that the document doesn't overburden the slowest connection and computer it is designed for. [¶]</p> <p>You can also generate a report of frames that are slowing playback, and then optimize or eliminate some of the content in those frames. See "Optimizing Flash documents" on page 36. [¶]</p> <p>To change the settings for the SWF file created using the Test Movie and Test Scene commands, use File > Publish Settings. See "Publishing Flash documents" on page 281. [¶]</p> <p>To test download performance: [¶] Do one of the following: [¶] Select Control > Test Scene or Control > Test Movie. [¶] If you test a scene or document, Flash publishes the current selection as a SWF file using the settings in the Publish Settings dialog box. (See "Publishing Flash documents" on page 281.) The SWF file opens in a new window and begins playing immediately. [¶] Select File > Open, and select a SWF file. [¶]</p> <p>Select View > Download Settings, and select a download speed to determine the streaming rate that Flash simulates: 14.4 Kbps, 28.8 Kbps, 56 Kbps, DSL, T1 or a User Setting. To enter your own User Setting, select Customize. [¶]</p> <p>When viewing the SWF file, select View > Bandwidth Profiler to display a graph of the downloading performance. [¶] The left side of the profiler displays information about the document, its settings, its state, and streams, if any are included in the document. [¶] The right section of the profiler shows the Timeline header and graph. In the graph, each bar represents an individual frame of the document. The size of the bar corresponds to that frame's size in bytes. The red line beneath the Timeline header indicates whether a given frame streams in real time with the current modem speed set in the Control menu. If a bar extends above the red line, the document must wait for that frame to load. [¶]</p>

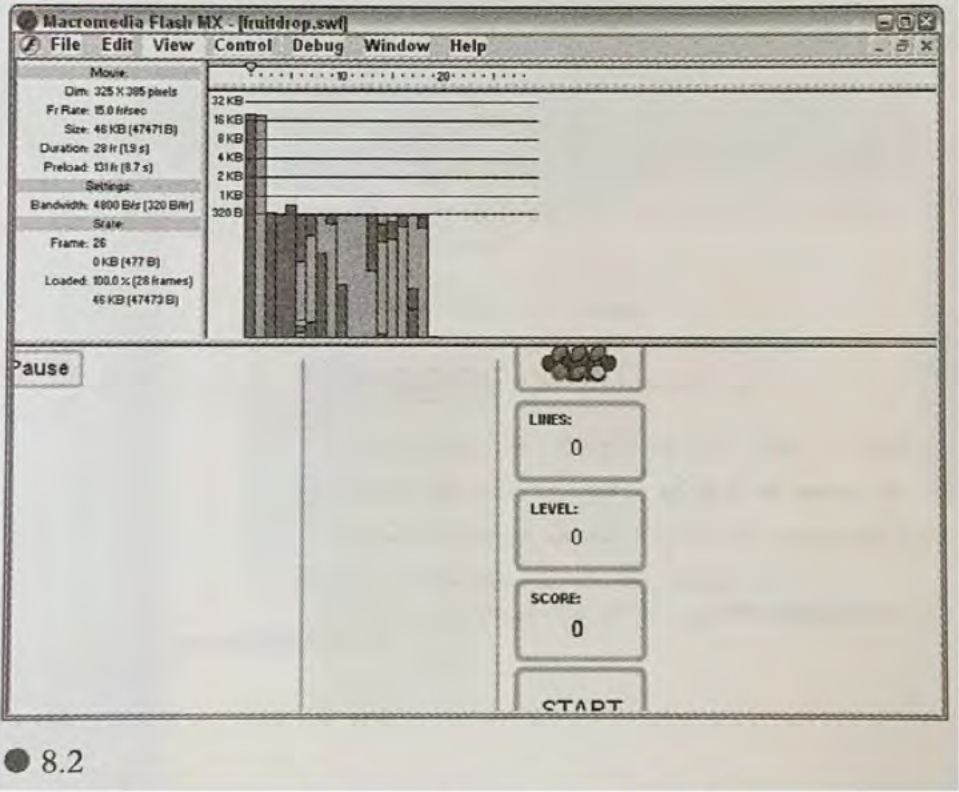
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'579 Claim 15	Reference/Combination
	<p>Select View > Simulate Download to turn streaming off or on. [¶] If you turn streaming off, the document starts over without simulating a web connection. [¶]</p> <p>Click a bar on the graph to display settings for the corresponding frame in the left window and stop the document. [¶]</p> <p>If necessary, adjust the view of the graph: [¶] Select View > Streaming Graph to show which frames cause pauses. This default view displays alternating light and dark gray blocks representing each frame. The side of each block indicates its relative byte size. The first frame stores a symbol's contents, so it is often larger than other frames. [¶] Select View > Frame by Frame Graph to display the size of each frame. This view helps you see which frames contribute to streaming delays. If any frame block extends above the red line in the graph, the Flash Player halts playback until the entire frame downloads. [¶]</p> <p>Close the test window to return to the normal authoring environment. [¶] Once you've set up a test environment incorporating the Bandwidth Profiler, you can open any SWF file directly in test mode. The file opens in a Flash Player window, using the Bandwidth Profiler and other selected viewing options. [¶] For more information on debugging your documents, see "Writing and Debugging Scripts" in ActionScript Reference Guide Help. [¶]</p> <p>To generate a report listing the amount of data in the final Flash Player file: [¶] Select File > Publish Settings and click the Flash tab. [¶] Select Generate Size Report. [¶] Click Publish. [¶]</p> <p>Flash generates a text file with the extension .txt. (If the document file is myMovie.fla, the text file is myMovie Report.txt.) The report lists the size of each frame, shape, text, sound, video and ActionScript script by frame.</p> <p>[Flash MX 2004 Using Flash, p. 390]</p> <p>In addition, Flash files are compact, making them perfect for wireless carrier networks, where transfer rates range between 9.6 and 60 kilobytes per second (Kbps). Mobile devices, unlike desktop computers, have limited storage capability, so the small footprint of Flash is ideal.</p>

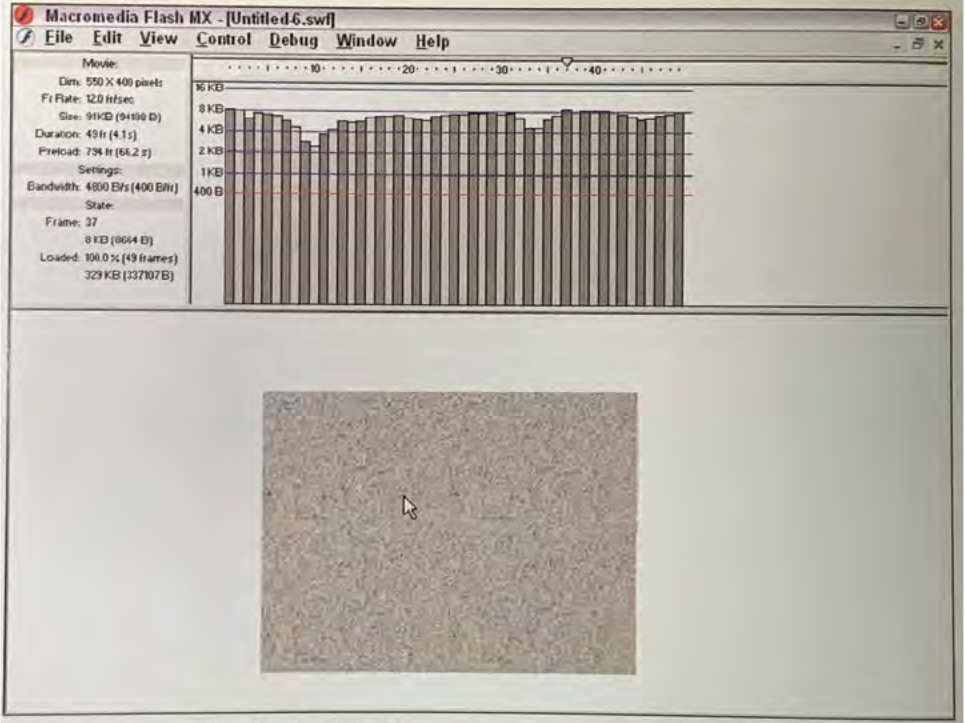
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*579 Claim 15	Reference/Combination
	<p>David discloses, via screenshots, the appearance of the Bandwidth Profiler.</p> <p>[David, p. 7]</p>  <p>● 1.6</p>

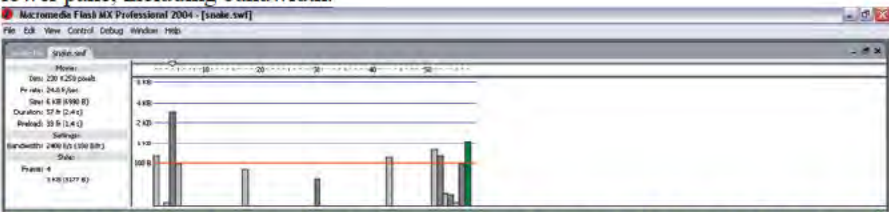

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*579 Claim 15	Reference/Combination
	<p>[David, p. 98]</p>  <p>● 8.2</p> <p>[David, #18 of 32 unnumbered pages between pages numbered 192 and 193]</p>

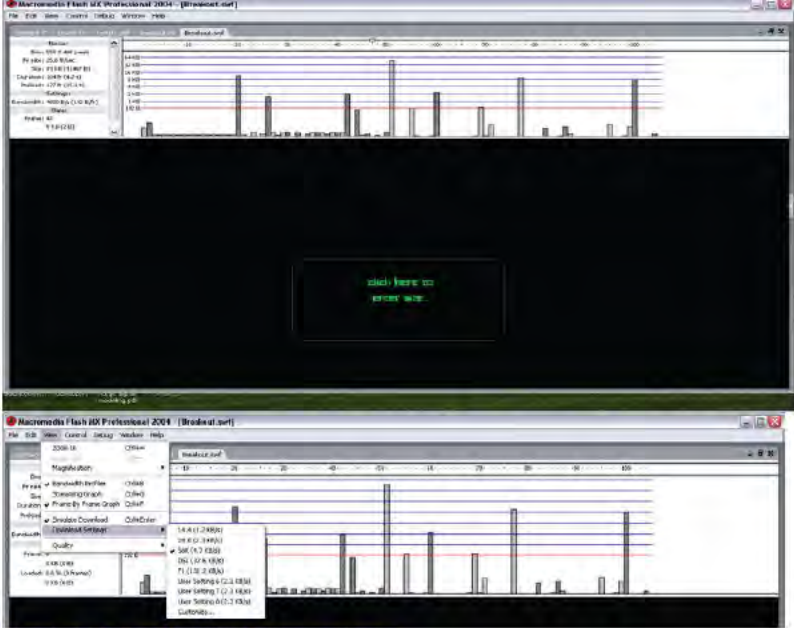
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*579 Claim 15	Reference/Combination
	 <p>The screenshot shows the Macromedia Flash MX Professional 2004 interface. The title bar reads 'Macromedia Flash MX - [Untitled6.swf]'. The menu bar includes 'File', 'Edit', 'View', 'Control', 'Debug', 'Window', and 'Help'. On the left, a 'Movie' panel displays properties: Dimensions: 550 X 400 pixels, Frame Rate: 12.0 fps, Size: 911KB (94100 B), Duration: 4.1s, Preload: 73% (68.2 s), Settings: Bandwidth: 4800 B/s (400 B/it), State: Frame: 37, 0 KB (0664 B), Loaded: 100.0 % (49 frames), 329 KB (337107 B). The main workspace features a timeline at the top with a playhead at 4.0 seconds and a video player below it showing a grainy, textured image with a mouse cursor.</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

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*579 Claim 15	Reference/Combination
<p>15[c] monitor utilization of one or more resources of the mobile device over time by an application running on a simulation of the mobile device;</p>	<p>The Flash MX Professional 2004 system discloses this limitation.</p> <p>lower pane, including bandwidth.</p>  <p>Bandwidth Profiler simulating a web connection and download at a speed of 28.8 kbps.</p>  <p>Bandwidth Profiler simulating a web connection and download at a speed of 56 kbps.</p> <p>Screenshots above from the Flash MX Professional 2004 emulator show a plurality of network characteristics, including “Bandwidth” and the amount of time needed for “Preload” for snake.swf.</p>

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	 <p>Bandwidth Profiler simulation options.</p> <p>For example, the Bandwidth Profiler in Flash MX Professional 2004 monitors utilization and/or usage of bandwidth, processor, memory/RAM, and screen, resources of the mobile device, over time by the Flash application running in the Test Movie environment (an application running on a simulation of the mobile device). It displays the utilization of bandwidth over time as a bar graph on a Timeline, while the application runs on a simulation of the mobile device.</p>

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	<p data-bbox="380 606 786 632"><i>[Flash MX 2004 Using Flash</i>, pp. 38–39]</p> <p data-bbox="380 634 1414 716">The Flash Player attempts to meet the frame rate you set; the actual frame rate during playback can vary on different computers. If a document that is downloading reaches a particular frame before the frame’s required data has downloaded, the document pauses until the data arrives. [¶]</p> <p data-bbox="380 745 1463 856">To view downloading performance graphically, you can use the Bandwidth Profiler, which shows how much data is sent for each frame according to the modem speed you specify. The Bandwidth Profiler is divided into two panes. The left pane shows information about the document, the download settings, the state, and streams, if any are included. The right pane shows information about individual frames in the document. [¶]</p> <p data-bbox="380 886 1463 997">In simulating the downloading speed, Flash uses estimates of typical Internet performance, not the exact modem speed. For example, if you choose to simulate a modem speed of 28.8 Kbps, Flash sets the actual rate to 2.3 Kbps to reflect typical Internet performance. The profiler also compensates for the added compression support for SWF files, which reduces the file size and improves streaming performance. [¶]</p> <p data-bbox="380 1026 1463 1194">When external SWF files, GIF and XML files, and variables are streamed into a player by using ActionScript calls such as loadMovie and getUrl, the data flows at the rate set for streaming. The stream rate for the main SWF file is reduced based on the reduction of bandwidth caused by the additional data requests. It’s helpful to test your document at each speed you intend to support, and on each computer you intend to support. This helps you ensure that the document doesn’t overburden the slowest connection and computer it is designed for. [¶]</p> <p data-bbox="380 1224 1442 1278">You can also generate a report of frames that are slowing playback, and then optimize or eliminate some of the content in those frames. See “Optimizing Flash documents” on page 36. [¶]</p> <p data-bbox="380 1308 1442 1365">To change the settings for the SWF file created using the Test Movie and Test Scene commands, use File > Publish Settings. See “Publishing Flash documents” on page 281. [¶]</p> <p data-bbox="380 1394 1463 1503">To test download performance: [¶] Do one of the following: [¶] Select Control > Test Scene or Control > Test Movie. [¶] If you test a scene or document, Flash publishes the current selection as a SWF file using the settings in the Publish Settings dialog box. (See “Publishing Flash documents” on page 281.) The SWF file opens in a new window and begins playing immediately. [¶] Select File > Open, and select a SWF file. [¶]</p>

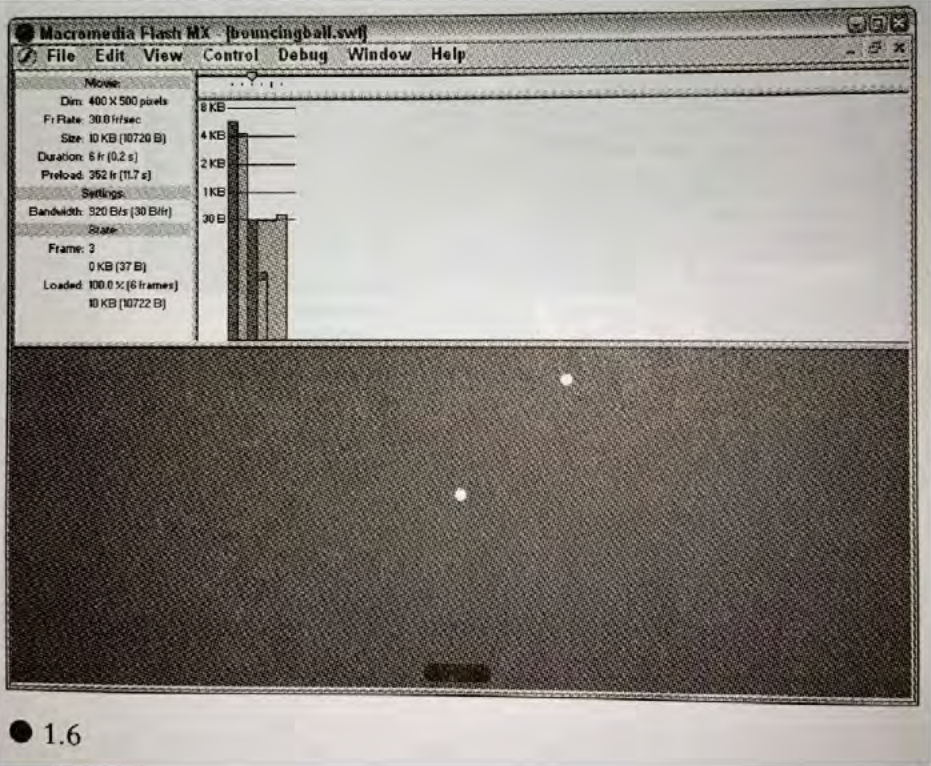
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	<p>Select View > Download Settings, and select a download speed to determine the streaming rate that Flash simulates: 14.4 Kbps, 28.8 Kbps, 56 Kbps, DSL, T1 or a User Setting. To enter your own User Setting, select Customize. [¶]</p> <p>When viewing the SWF file, select View > Bandwidth Profiler to display a graph of the downloading performance. [¶] The left side of the profiler displays information about the document, its settings, its state, and streams, if any are included in the document. [¶] The right section of the profiler shows the Timeline header and graph. In the graph, each bar represents an individual frame of the document. The size of the bar corresponds to that frame's size in bytes. The red line beneath the Timeline header indicates whether a given frame streams in real time with the current modem speed set in the Control menu. If a bar extends above the red line, the document must wait for that frame to load. [¶]</p> <p>Select View > Simulate Download to turn streaming off or on. [¶] If you turn streaming off, the document starts over without simulating a web connection. [¶]</p> <p>Click a bar on the graph to display settings for the corresponding frame in the left window and stop the document. [¶]</p> <p>If necessary, adjust the view of the graph: [¶] Select View > Streaming Graph to show which frames cause pauses. This default view displays alternating light and dark gray blocks representing each frame. The side of each block indicates its relative byte size. The first frame stores a symbol's contents, so it is often larger than other frames. [¶] Select View > Frame by Frame Graph to display the size of each frame. This view helps you see which frames contribute to streaming delays. If any frame block extends above the red line in the graph, the Flash Player halts playback until the entire frame downloads. [¶]</p> <p>Close the test window to return to the normal authoring environment. [¶] Once you've set up a test environment incorporating the Bandwidth Profiler, you can open any SWF file directly in test mode. The file opens in a Flash Player window, using the Bandwidth Profiler and other selected viewing options. [¶] For more information on debugging your documents, see "Writing and Debugging Scripts" in ActionScript Reference Guide Help. [¶]</p>

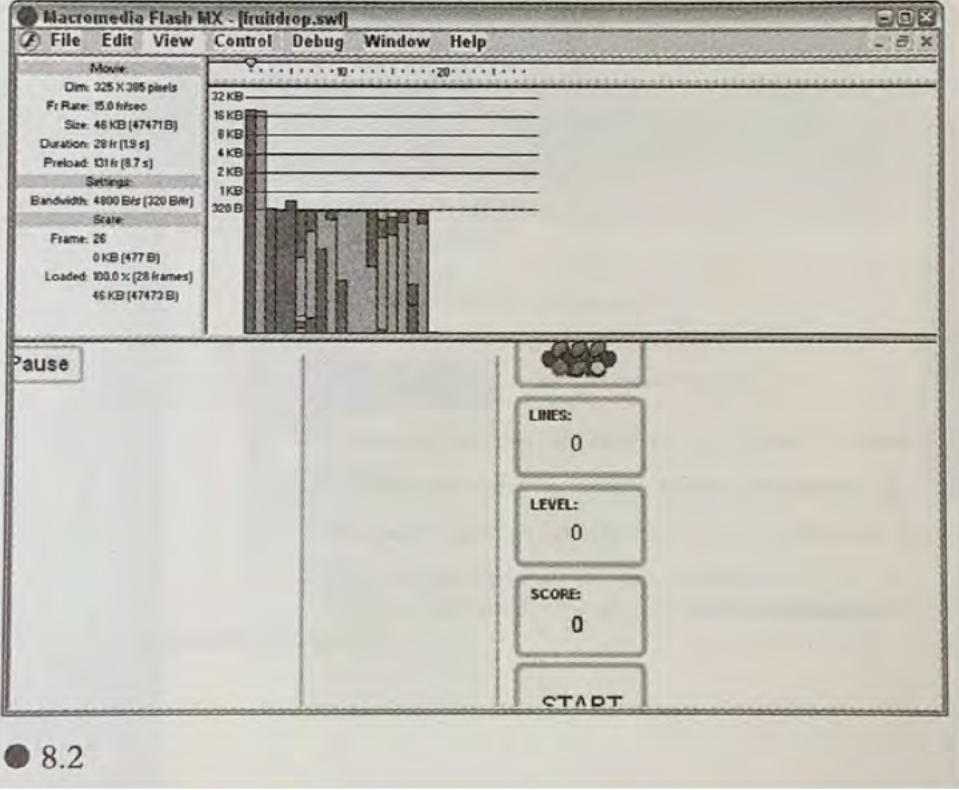
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'579 Claim 15	Reference/Combination
	<p data-bbox="378 604 1458 659">To generate a report listing the amount of data in the final Flash Player file: [¶] Select File > Publish Settings and click the Flash tab. [¶] Select Generate Size Report. [¶] Click Publish. [¶]</p> <p data-bbox="378 688 1464 772">Flash generates a text file with the extension .txt. (If the document file is myMovie.fla, the text file is myMovie Report.txt.) The report lists the size of each frame, shape, text, sound, video and ActionScript script by frame.</p> <p data-bbox="378 802 753 829">[Flash MX 2004 Using Flash, p. 390]</p> <p data-bbox="378 831 1442 915">In addition, Flash files are compact, making them perfect for wireless carrier networks, where transfer rates range between 9.6 and 60 kilobytes per second (Kbps). Mobile devices, unlike desktop computers, have limited storage capability, so the small footprint of Flash is ideal.</p> <p data-bbox="378 999 1120 1026">David discloses, via screenshots, the appearance of the Bandwidth Profiler.</p> <p data-bbox="378 1056 505 1083">[David, p. 7]</p>

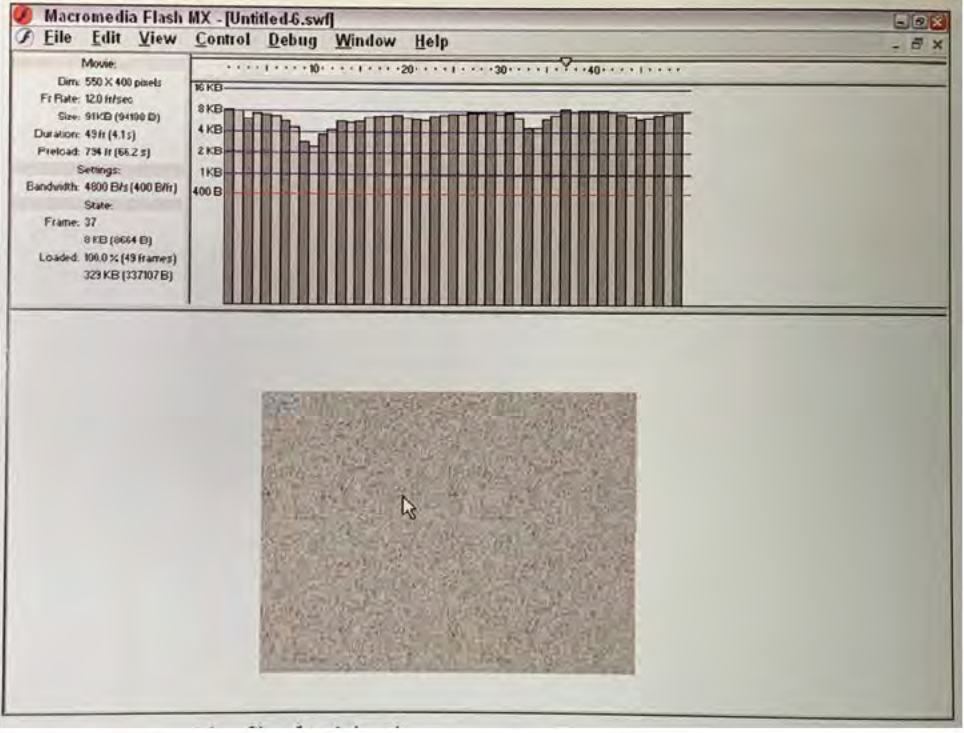
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*579 Claim 15	Reference/Combination
	<div><p>● 1.6</p><p>[David, p. 98]</p></div>

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'579 Claim 15	Reference/Combination
	 <p>Macromedia Flash MX - [fruitdrop.swf]</p> <p>File Edit View Control Debug Window Help</p> <p>Movie: Dim: 325 X 285 pixels Fr Rate: 15.0 fps/sec Size: 46 KB (47471 B) Duration: 28 fr (1.9 s) Preload: 131 fr (8.7 s) Settings: Bandwidth: 4800 B/s (320 B/fr) Scale: Frame: 26 0 KB (477 B) Loaded: 100.0 % (28 frames) 46 KB (47473 B)</p> <p>32 KB 16 KB 8 KB 4 KB 2 KB 1 KB 320 B</p> <p>Pause</p> <p>LINES: 0</p> <p>LEVEL: 0</p> <p>SCORE: 0</p> <p>START</p> <p>8.2</p> <p>[David, #18 of 32 unnumbered pages between pages numbered 192 and 193]</p>

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	 <p>The screenshot shows the Macromedia Flash MX interface. The top menu bar includes File, Edit, View, Control, Debug, Window, and Help. The left panel displays movie clip properties: Dimensions (550 X 400 pixels), Frame Rate (12.0 fps), Size (911 KB (94196 B)), Duration (49 fr (4.1 s)), and Preload (734 fr (68.2 s)). The right panel shows a timeline with a progress bar and a keyframe indicator. The main stage area displays a textured, brownish-grey rectangular area with a mouse cursor pointing at it.</p> <p>The Flash Player, used for testing Flash applications and included in the Bandwidth Profiler, monitors processor utilization and frame rate.</p> <p>[Flash MX 2004 Using Flash, p. 286]</p>

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	<p>Select Quality options to determine the trade-off between processing time and appearance, as follows. This option sets the QUALITY parameter's value in the object and embed tags. [¶] Low favors playback speed over appearance and does not use anti-aliasing. [¶]</p> <p>Auto Low emphasizes speed at first but improves appearance whenever possible. Playback begins with anti-aliasing turned off. If Flash Player detects that the processor can handle it, anti-aliasing is turned on. [¶] Auto High emphasizes playback speed and appearance equally at first but sacrifices appearance for playback speed if necessary. Playback begins with anti-aliasing turned on. If the actual frame rate drops below the specified frame rate, anti-aliasing is turned off to improve playback speed. Use this setting to emulate the View > Antialias setting in Flash.</p> <p>[Flash MX 2004 Using Flash, p. 151] The frame rate, the speed at which the animation is played, is measured in number of frames per second. A frame rate that's too slow makes the animation appear to stop and start; a frame rate that's too fast blurs the details of the animation. A frame rate of 12 frames per second (fps) usually gives the best results on the web. QuickTime and AVI movies generally have a frame rate of 12 fps, while the standard motion-picture rate is 24 fps. [¶] The complexity of the animation and the speed of the computer on which the animation is being played affect the smoothness of the playback. Test your animations on a variety of machines to determine optimum frame rates. [¶] Because you specify only one frame rate for the entire Flash document, it's a good idea to set this rate before you begin creating animation. See "Creating or opening a document and setting properties" on page 9.</p> <p>[Flash MX 2004 Using Flash, p. 9] Creating or opening a document and setting properties [¶] You can create a new document or open a previously saved document as you work in Flash. In Windows, you can use the New File button to open a document of the same type as the last document created. [¶]</p> <p>To set the size, frame rate, background color, and other properties of a new or existing document, you use the Document Properties dialog box. You can also use the Property inspector to set properties for an existing document. The Property inspector makes it easy to access and change the most commonly used attributes of a document. For more information on the Property inspector, see "Using panels and the Property inspector" in <u>Getting Started Help</u>.</p>

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	<p>[Flash MX 2004 Using Flash, p. 10] To set properties for a new or existing document in the Document Properties dialog box: [¶] 1 With the document open, select Modify > Document. [¶] The Document Properties dialog box appears. [¶] 2 For Frame Rate, enter the number of animation frames to be displayed every second. For most computer-displayed animations, especially those playing from a website, 8 fps (frames per second) to 12 fps is sufficient (12 fps is the default frame rate).</p> <p>[Flash MX 2004 Using Flash, p. 38] The Flash Player attempts to meet the frame rate you set; the actual frame rate during playback can vary on different computers.</p> <p>[Flash MX 2004 Using Flash, p. 306] (Optional) Specifies the level of anti-aliasing to be used during playback of your application. Because anti-aliasing requires a faster processor to smooth each frame of the SWF file before it is rendered on the viewer's screen, select a value based on whether speed or appearance is your top priority: [¶] Low favors playback speed over appearance and never uses anti-aliasing. [¶]</p> <p>Autolow emphasizes speed at first but improves appearance whenever possible. Playback begins with anti-aliasing turned off. If Flash Player detects that the processor can handle it, anti-aliasing is turned on. [¶]</p> <p>Autohigh emphasizes playback speed and appearance equally at first but sacrifices appearance for playback speed if necessary. Playback begins with anti-aliasing turned on. If the frame rate drops below the specified frame rate, anti-aliasing is turned off to improve playback speed. Use this setting to emulate the Antialias command in Flash (View > Preview Mode > Antialias).</p> <p>[Flash MX 2004 Getting Started with Flash, p. 21] The Timeline status display at the bottom of the Timeline indicates the selected frame number, the current frame rate, and the elapsed time to the current frame. [¶] Note: When an animation is played, the actual frame rate is displayed; this may differ from the document frame rate if the computer can't display the animation quickly enough.</p>

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	<p>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, pp. 15–16] Performance optimization ¶ CPU speed in mobile phones varies among models and is typically much slower than the CPU speed in current desktop computers. Therefore, it is extremely important to consider application performance and optimization from the beginning of each project for creating Flash Lite content created for mobile phones. ¶ Note: In Flash MX Professional 2004, you can find tips on optimizing Flash applications. (Select Help > Using Flash -> Search and enter optimizing movies in the Keyword Searchtext box.) ¶ If you follow the simple guidelines described in this document to author your Flash Lite content, you can create rich and compelling content despite CPU limitations. ¶</p> <p>Animation ¶ When creating animated content for a mobile phone, it is important to keep in mind the phone's CPU limitations. The following guidelines can help prevent your Flash Lite content from running slowly: ¶ • If you need to provide intense or complex animation, experiment with changing the quality setting of the content. The default quality setting is Medium. ¶ To change the quality setting in Flash MX Professional 2004, select File > Publish Settings, and select the HTML tab. Select a quality setting from the Quality pop-up menu. ¶ Because changing the quality setting might noticeably affect the visual quality of the Flash Lite content, make sure to thoroughly test the SWF file.</p> <p>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, p. 19] Device speed and frames per second ¶ If the project contains static images, it's not likely that the device processor speed will be an issue. The complexity of Flash requires some important trade-offs when developing content for mobile phones. Until mobile phones have faster processors and there are improvements to other internal components, you must make adjustments to provide an experience that does not appear sluggish to users; otherwise, they won't use the application. ¶ Try to avoid full-screen wipes, fades, and animations. Remember that updating many pixels at a time can be slow, depending on the content. The performance of your Flash application depends on the number of open applications, available phone memory, processor speed, and screen resolution.</p> <p>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, p. 48] To create a Flash Lite 1.1 compatible SWF file: ¶ 1. In Flash MX Professional 2004, create a new document and name it FlashLiteTest fla. ¶ 2. Select File > Publish Settings, and then the Flash tab. In the Version pop-up menu, select Flash Lite 1.1. Click OK. ¶ 3. From the Property inspector select the Size button, and</p>

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	<p>change your document properties so that width = 240, height = 266, and Frame Rate = 15. Click OK. Make sure to use the appropriate frame rate on the actual devices.</p> <p><i>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, p. 57]</i> The development kit includes a variety of sample files (FLA and SWF files) that demonstrate many of the concepts and applications that are described in this document. These examples are included to help you create content for mobile phones. The files include capabilities examples, processor detectors, and data-driven examples. Be sure to view the readme.txt file in the folder associated with each sample file.</p> <p>The Flash Player further monitors memory/RAM utilization, evidenced by for example setting maximum memory sizes, detecting out-of-memory errors and buffer overruns, and determining the memory used and remaining.</p> <p><i>[Flash MX 2004 Using Flash, p. 280]</i> Buffer overrun protection prevents the intentional misuse of external files in a Flash document to overwrite a user's memory or insert destructive code such as a virus. This prevents a Flash document from reading or writing data outside the document's designated memory space on a user's system. Buffer overrun protection is enabled automatically.</p> <p><i>[Flash MX Professional 2004 Flash Lite Authoring Guidelines for the i-mode Service by NTT DoCoMo, p. 23]</i> Set the run-time memory available to Flash Lite movies running in the i-mode HTML simulator.</p> <p><i>[Flash MX Professional 2004 Flash Lite Authoring Guidelines for the i-mode Service by NTT DoCoMo, pp. 41 – 42]</i> This appendix lists the possible information, warning, and error messages you might encounter when creating movies for Flash Lite for i-mode. [...] SWFS033 [¶] Not enough memory to perform operation. [¶] The Flash player was unable to get enough memory to finish the operation</p>

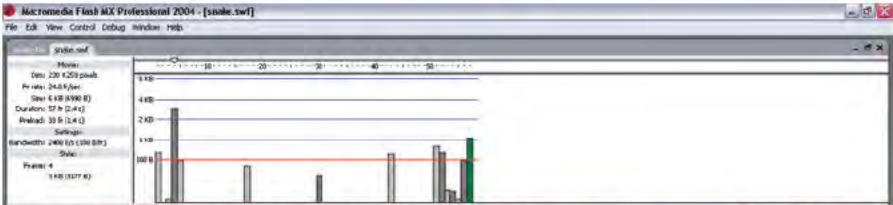
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	<p data-bbox="378 604 1105 632"><i>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, p. 33]</i></p> <p data-bbox="378 632 1414 716">The GetFreePlayerMemory() function returns the amount of memory, in kilobytes, currently available to Flash Lite. [...] The GetTotalPlayerMemory() function returns the total amount of memory, in kilobytes, allocated to Flash Lite.</p> <p data-bbox="378 800 1458 856">Moreover, concerns about mobile devices' limited CPU, memory, and network speeds pervade the Flash MX Professional 2004 manuals' discussions of developing Flash content for mobile devices.</p> <p data-bbox="378 888 751 915"><i>[Flash MX 2004 Using Flash, p. 390]</i></p> <p data-bbox="378 915 1438 999">In addition, Flash files are compact, making them perfect for wireless carrier networks, where transfer rates range between 9.6 and 60 kilobytes per second (Kbps). Mobile devices, unlike desktop computers, have limited storage capability, so the small footprint of Flash is ideal.</p> <p data-bbox="378 1031 956 1058"><i>[Flash MX Professional 2004 Flash Lite User Guide, p. 5]</i></p> <p data-bbox="378 1058 1458 1167">Macromedia has created a new Flash Player version, called Macromedia® Flash™ Lite, that runs on a new class of consumer mobile devices. This format is designed to run optimally on devices with limited resources (memory, processor speed, display area). [...] With Macromedia Flash MX Professional 2004, you can author, preview, publish, and validate content for Flash Lite.</p> <p data-bbox="378 1199 1430 1255"><i>[Flash MX Professional 2004 Flash Lite Authoring Guidelines for the i-mode Service by NTT DoCoMo, p. 10]</i></p> <p data-bbox="378 1255 1455 1451">There are limitations on file size and run-time memory usage for Flash Lite movies running on i-mode phones. There is a prescribed limit on how large a web page can be, whether it includes Flash Lite movies or not. For 505i phones, this limit is 20KB. Full details can be found at the DoCoMo website (see Appendix D, "References," on page 47). This limit applies to an i-mode page's HTML, SWF content, and all graphic images combined. Web pages larger than this limit cannot be downloaded to an i-mode phone and no error message appears. This limitation also applies to Flash Lite movies played directly in the browser without being embedded in an i-mode compatible HTML file. [¶]</p>

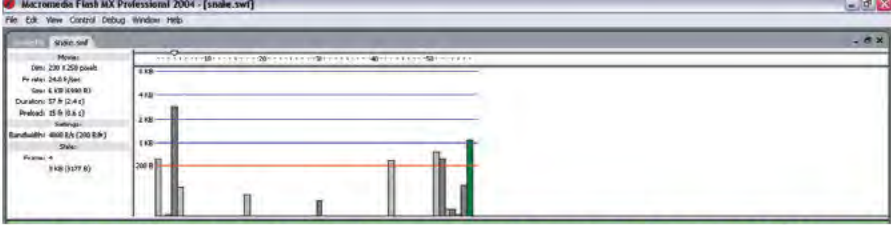
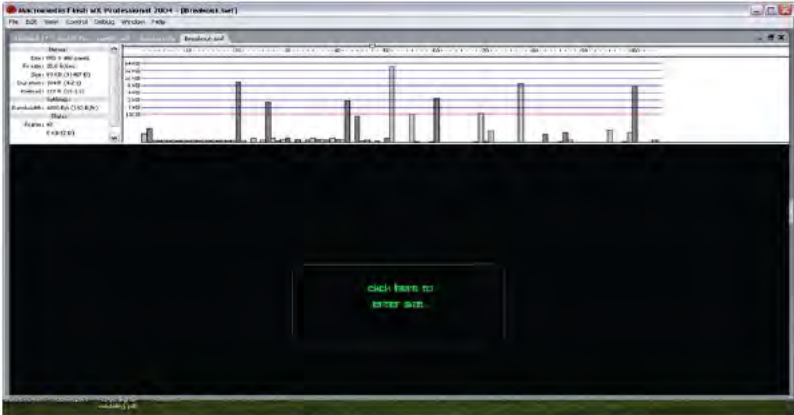
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	<p>The run-time memory available to Flash Lite movies running on i-mode phones is limited and may vary from model to model. Generally, for the 505i phones, this limit is not less than 200KB. Because Flash MX Professional 2004 does not provide a mechanism for checking a phone's run-time memory consumption, Macromedia strongly recommends that you test all content on actual i-mode phones.</p> <p><i>[Flash MX Professional 2004 Flash Lite Authoring Guidelines for the i-mode Service by NTT DoCoMo, p. 11]</i></p> <p>CPU speed in i-mode phones varies from model to model, and is typically much slower than current desktop computers. Therefore, it is extremely important to consider movie performance and optimization from the beginning of each project. The optimization recommendations for creating any Flash movie also apply to Flash Lite movies created for i-mode phones. For the latter, their importance is amplified. [¶] Note: In Flash MX Professional 2004, you can find tips on optimizing Flash movies—select Help > Using Flash -> Search and enter optimizing movies in the keyword search text box. [¶] If you follow some simple guidelines, as described in this document, to author your movies, you can create rich and compelling content despite CPU limitations.</p> <p><i>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, p. 17]</i></p> <p>Flash Lite generally uses vector graphics to define content, which can tax a phone's CPU when rendering complex graphics and animations. In general, the more vectors that are manipulated on the Stage, the more CPU power is required. This is also true for Flash movies delivered on desktop computers. However, a mobile phone is far less powerful than desktop computer, so you should avoid taxing the CPU. [¶]</p> <p>When creating content for mobile phones, it is sometimes better to use bitmaps instead of vectors because they require less CPU power to animate. For example, a road map of a large city would have too many complex shapes to scroll and animate well on a mobile phone if it were created as a vector graphic; a bitmap would work much better. [¶]</p> <p>Using bitmaps produces larger files than using vector images, so take care during development to find the right balance of CPU versus file size and runtime memory requirements. Because of mobile phones' smaller screens, slower data transmission speeds, limited memory, and slower CPU speeds, you should take extra care in planning and testing.</p>

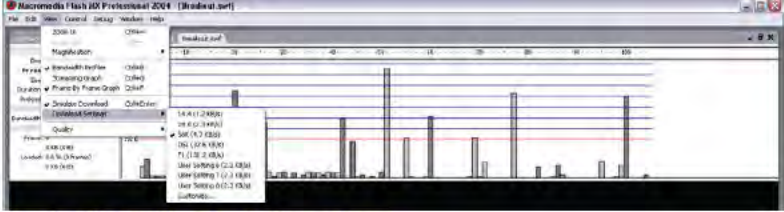
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	<p>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, p. 17]</p> <p>Device speed and frames per second [¶] If the project contains static images, it's not likely that the device processor speed will be an issue. The complexity of Flash requires some important trade-offs when developing content for mobile phones. Until mobile phones have faster processors and there are improvements to other internal components, you must make adjustments to provide an experience that does not appear sluggish to users; otherwise, they won't use the application. [¶] Try to avoid full-screen wipes, fades, and animations. Remember that updating many pixels at a time can be slow, depending on the content. The performance of your Flash application depends on the number of open applications, available phone memory, processor speed, and screen resolution.</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>
15[d] display a representation of one or more of the monitored resource;	<p>The Flash MX Professional 2004 system discloses this limitation.</p>  <p>Bandwidth Profiler simulating a web connection and download at a speed of 28.8 kbps.</p>

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	 <p>Bandwidth Profiler simulating a web connection and download at a speed of 56 kbps. Screenshots above from the Flash MX Professional 2004 emulator show a plurality of network characteristics, including "Bandwidth" and the amount of time needed for "Preload" for snake.swf.</p> 

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*579 Claim 15	Reference/Combination
	<div data-bbox="378 604 1156 814">  </div> <p data-bbox="378 816 768 842">Bandwidth Profiler simulation options.</p> <p data-bbox="378 900 1377 957">For example, the Bandwidth Profiler in Flash MX Professional 2004 displays a bar chart of the Flash application's bandwidth utilization.</p> <p data-bbox="378 987 789 1012">[Flash MX 2004 Using Flash, pp. 38–39]</p> <p data-bbox="378 1014 1414 1098">The Flash Player attempts to meet the frame rate you set; the actual frame rate during playback can vary on different computers. If a document that is downloading reaches a particular frame before the frame's required data has downloaded, the document pauses until the data arrives. [¶]</p> <p data-bbox="378 1127 1463 1241">To view downloading performance graphically, you can use the Bandwidth Profiler, which shows how much data is sent for each frame according to the modem speed you specify. The Bandwidth Profiler is divided into two panes. The left pane shows information about the document, the download settings, the state, and streams, if any are included. The right pane shows information about individual frames in the document. [¶]</p> <p data-bbox="378 1270 1463 1383">In simulating the downloading speed, Flash uses estimates of typical Internet performance, not the exact modem speed. For example, if you choose to simulate a modem speed of 28.8 Kbps, Flash sets the actual rate to 2.3 Kbps to reflect typical Internet performance. The profiler also compensates for the added compression support for SWF files, which reduces the file size and improves streaming performance. [¶]</p> <p data-bbox="378 1413 1463 1518">When external SWF files, GIF and XML files, and variables are streamed into a player by using ActionScript calls such as loadMovie and getUrl, the data flows at the rate set for streaming. The stream rate for the main SWF file is reduced based on the reduction of bandwidth caused by the additional data requests. It's helpful to test your document at each speed you intend to support, and on each computer you intend to support. This</p>

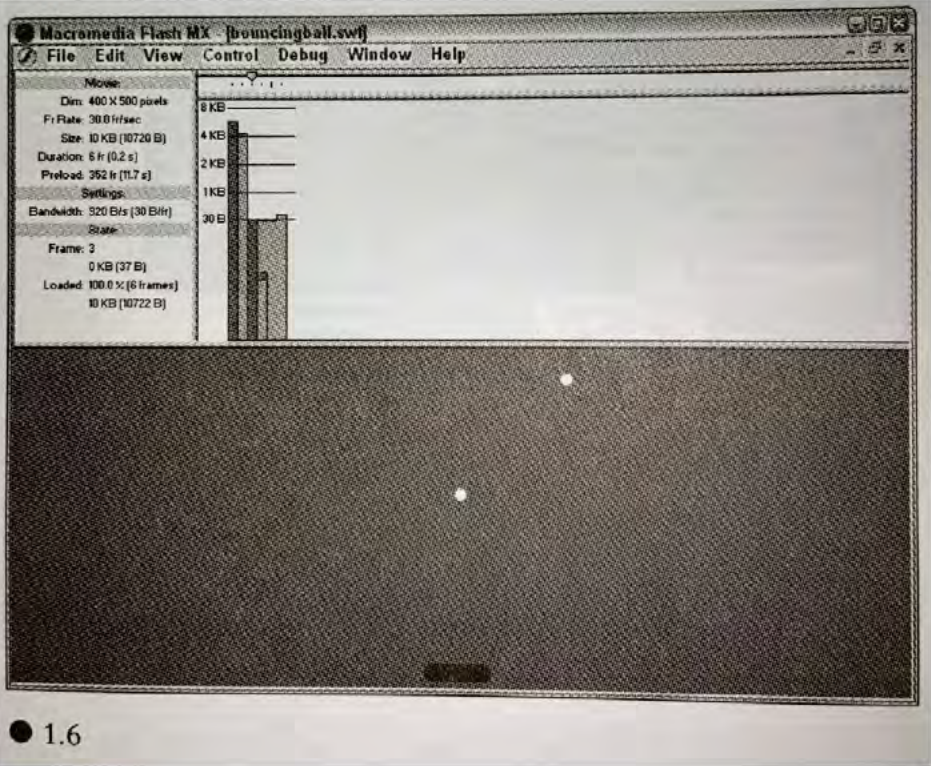
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579 Claim 15	Reference/Combination
	<p>helps you ensure that the document doesn't overburden the slowest connection and computer it is designed for. [¶]</p> <p>You can also generate a report of frames that are slowing playback, and then optimize or eliminate some of the content in those frames. See "Optimizing Flash documents" on page 36. [¶]</p> <p>To change the settings for the SWF file created using the Test Movie and Test Scene commands, use File > Publish Settings. See "Publishing Flash documents" on page 281. [¶]</p> <p>To test download performance: [¶] Do one of the following: [¶] Select Control > Test Scene or Control > Test Movie. [¶] If you test a scene or document, Flash publishes the current selection as a SWF file using the settings in the Publish Settings dialog box. (See "Publishing Flash documents" on page 281.) The SWF file opens in a new window and begins playing immediately. [¶] Select File > Open, and select a SWF file. [¶]</p> <p>Select View > Download Settings, and select a download speed to determine the streaming rate that Flash simulates: 14.4 Kbps, 28.8 Kbps, 56 Kbps, DSL, T1 or a User Setting. To enter your own User Setting, select Customize. [¶]</p> <p>When viewing the SWF file, select View > Bandwidth Profiler to display a graph of the downloading performance. [¶] The left side of the profiler displays information about the document, its settings, its state, and streams, if any are included in the document. [¶] The right section of the profiler shows the Timeline header and graph. In the graph, each bar represents an individual frame of the document. The size of the bar corresponds to that frame's size in bytes. The red line beneath the Timeline header indicates whether a given frame streams in real time with the current modem speed set in the Control menu. If a bar extends above the red line, the document must wait for that frame to load. [¶]</p> <p>Select View > Simulate Download to turn streaming off or on. [¶] If you turn streaming off, the document starts over without simulating a web connection. [¶]</p> <p>Click a bar on the graph to display settings for the corresponding frame in the left window and stop the document. [¶]</p>

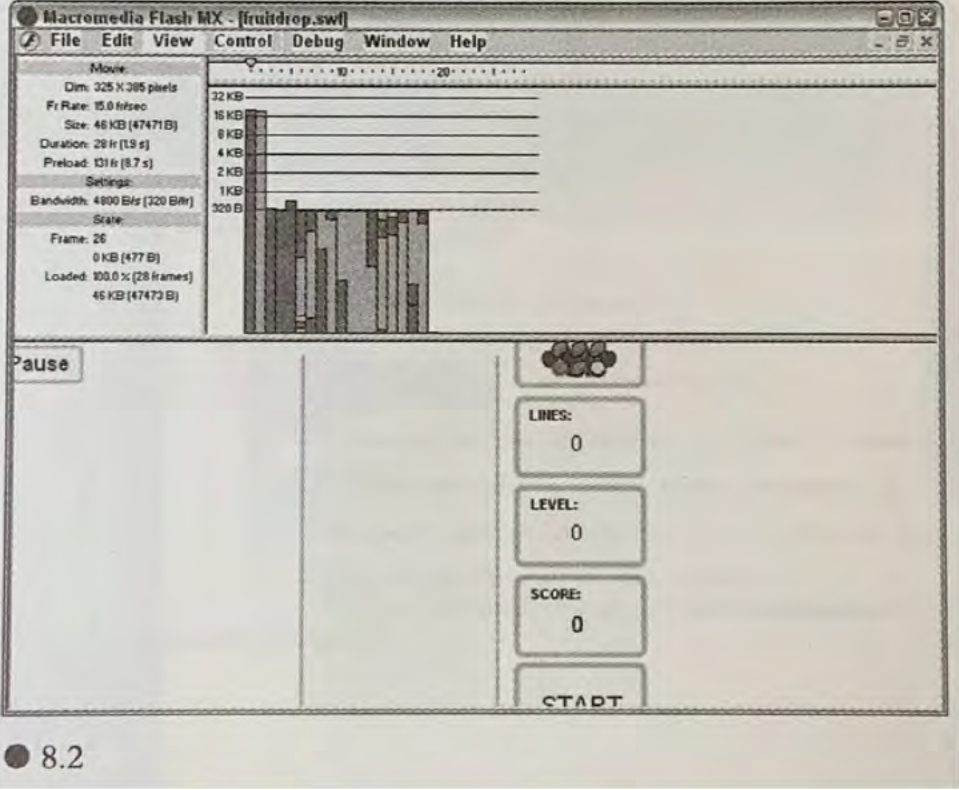
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'579 Claim 15	Reference/Combination
	<p>If necessary, adjust the view of the graph: [¶] Select View > Streaming Graph to show which frames cause pauses. This default view displays alternating light and dark gray blocks representing each frame. The side of each block indicates its relative byte size. The first frame stores a symbol's contents, so it is often larger than other frames. [¶] Select View > Frame by Frame Graph to display the size of each frame. This view helps you see which frames contribute to streaming delays. If any frame block extends above the red line in the graph, the Flash Player halts playback until the entire frame downloads. [¶]</p> <p>Close the test window to return to the normal authoring environment. [¶] Once you've set up a test environment incorporating the Bandwidth Profiler, you can open any SWF file directly in test mode. The file opens in a Flash Player window, using the Bandwidth Profiler and other selected viewing options. [¶] For more information on debugging your documents, see "Writing and Debugging Scripts" in ActionScript Reference Guide Help. [¶]</p> <p>To generate a report listing the amount of data in the final Flash Player file: [¶] Select File > Publish Settings and click the Flash tab. [¶] Select Generate Size Report. [¶] Click Publish. [¶]</p> <p>Flash generates a text file with the extension .txt. (If the document file is myMovie fla, the text file is myMovie Report.txt.) The report lists the size of each frame, shape, text, sound, video and ActionScript script by frame.</p> <p>[Flash MX 2004 Using Flash, p. 390]</p> <p>In addition, Flash files are compact, making them perfect for wireless carrier networks, where transfer rates range between 9.6 and 60 kilobytes per second (Kbps). Mobile devices, unlike desktop computers, have limited storage capability, so the small footprint of Flash is ideal.</p> <p>David discloses, via screenshots, the appearance of the Bandwidth Profiler.</p> <p>[David, p. 7]</p>

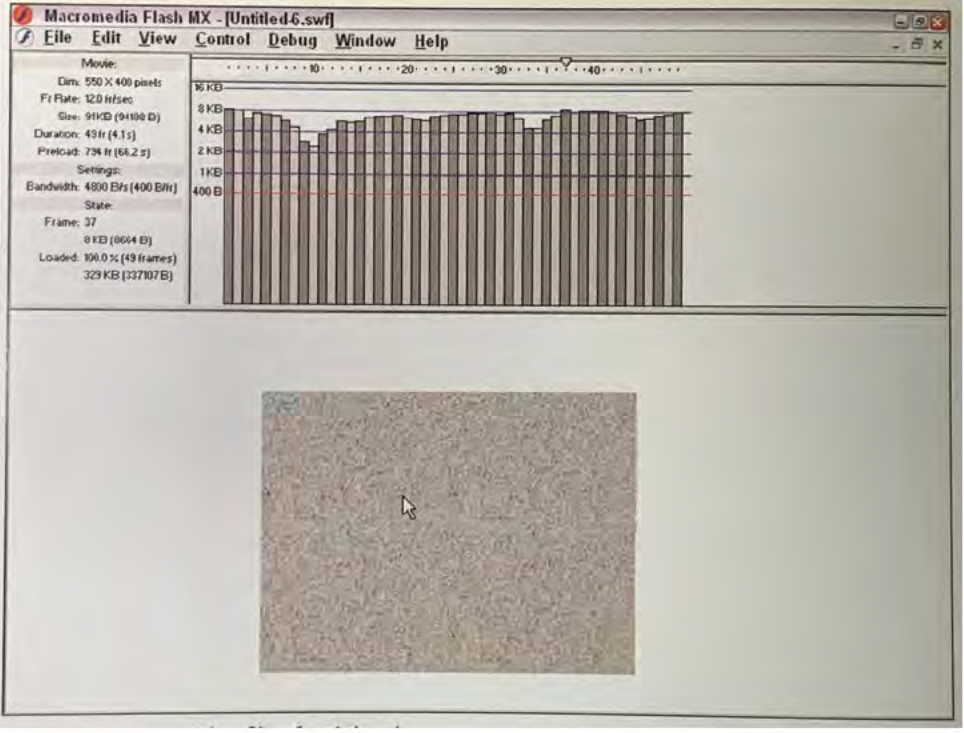
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*579 Claim 15	Reference/Combination
	<div><p>● 1.6</p><p>[David, p. 98]</p></div>

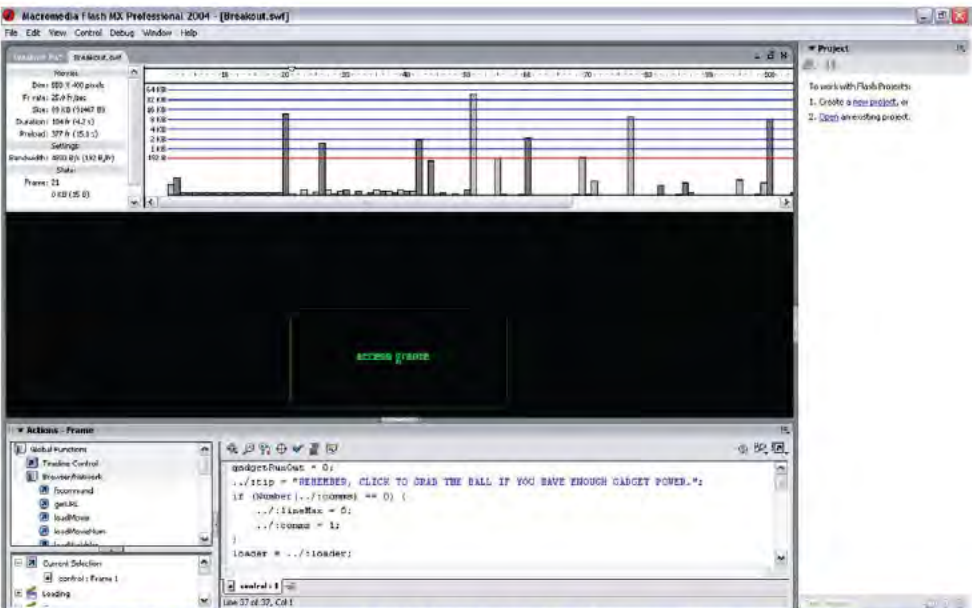
Wapp Tech Limited Partnership et al. v. JPMorgan Chase Bank, N.A., No. 4:23-cv-1137 (E.D. Tex.)

579 Claim 15	Reference/Combination
	 <p>● 8.2</p> <p>[David, #18 of 32 unnumbered pages between pages numbered 192 and 193]</p>

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*579 Claim 15	Reference/Combination
	 <p>The screenshot shows the Macromedia Flash MX Professional 2004 interface. The top menu bar includes File, Edit, View, Control, Debug, Window, and Help. The main workspace is divided into two sections. The top section displays a timeline with a series of vertical bars representing frames, with a playhead at the 40-second mark. The bottom section shows a video player with a grainy, textured image. The left sidebar contains the following information:</p> <ul style="list-style-type: none"> Movie: <ul style="list-style-type: none"> Dim: 550 X 400 pixels Fr Rate: 120 fps/sec Size: 91KB (94100 B) Duration: 49 fr (4.1 s) Preload: 794 fr (68.2 s) Settings: <ul style="list-style-type: none"> Bandwidth: 4800 B/s (400 B/fr) State: <ul style="list-style-type: none"> Frame: 37 0 KB (8664 B) Loaded: 100.0 % (49 frames) 329 KB (337107 B) <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

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*579 Claim 15	Reference/Combination
<p>15[e] correspond the utilization of a specific displayed resource at a given time with one or more functions, or code, or both of the application responsible for that utilization:</p>	<p>The Flash MX Professional 2004 system discloses this limitation.</p>  <p>Screenshot of Flash MX Professional 2004 interface with "Actions – Frame" window showing the state of the Flash application at frame 21, including an ActionScript script, and indicating the use of bandwidth per frame of the application.</p>

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	<p>For example, the Bandwidth Profiler in Flash MX Professional 2004 corresponds the utilization of the displayed bandwidth at a frame (a given time) of the Flash application with the ActionScript, symbols, function calls, and graphical assets (functions and/or code) responsible for that utilization.</p> <p>[<i>Flash MX 2004 Using Flash</i>, pp. 38–39]</p> <p>The Flash Player attempts to meet the frame rate you set; the actual frame rate during playback can vary on different computers. If a document that is downloading reaches a particular frame before the frame's required data has downloaded, the document pauses until the data arrives. [¶]</p> <p>To view downloading performance graphically, you can use the Bandwidth Profiler, which shows how much data is sent for each frame according to the modem speed you specify. The Bandwidth Profiler is divided into two panes. The left pane shows information about the document, the download settings, the state, and streams, if any are included. The right pane shows information about individual frames in the document. [¶]</p> <p>In simulating the downloading speed, Flash uses estimates of typical Internet performance, not the exact modem speed. For example, if you choose to simulate a modem speed of 28.8 Kbps, Flash sets the actual rate to 2.3 Kbps to reflect typical Internet performance. The profiler also compensates for the added compression support for SWF files, which reduces the file size and improves streaming performance. [¶]</p> <p>When external SWF files, GIF and XML files, and variables are streamed into a player by using ActionScript calls such as loadMovie and getUrl, the data flows at the rate set for streaming. The stream rate for the main SWF file is reduced based on the reduction of bandwidth caused by the additional data requests. It's helpful to test your document at each speed you intend to support, and on each computer you intend to support. This helps you ensure that the document doesn't overburden the slowest connection and computer it is designed for. [¶]</p> <p>You can also generate a report of frames that are slowing playback, and then optimize or eliminate some of the content in those frames. See "Optimizing Flash documents" on page 36. [¶]</p> <p>To change the settings for the SWF file created using the Test Movie and Test Scene commands, use File > Publish Settings. See "Publishing Flash documents" on page 281. [¶]</p>

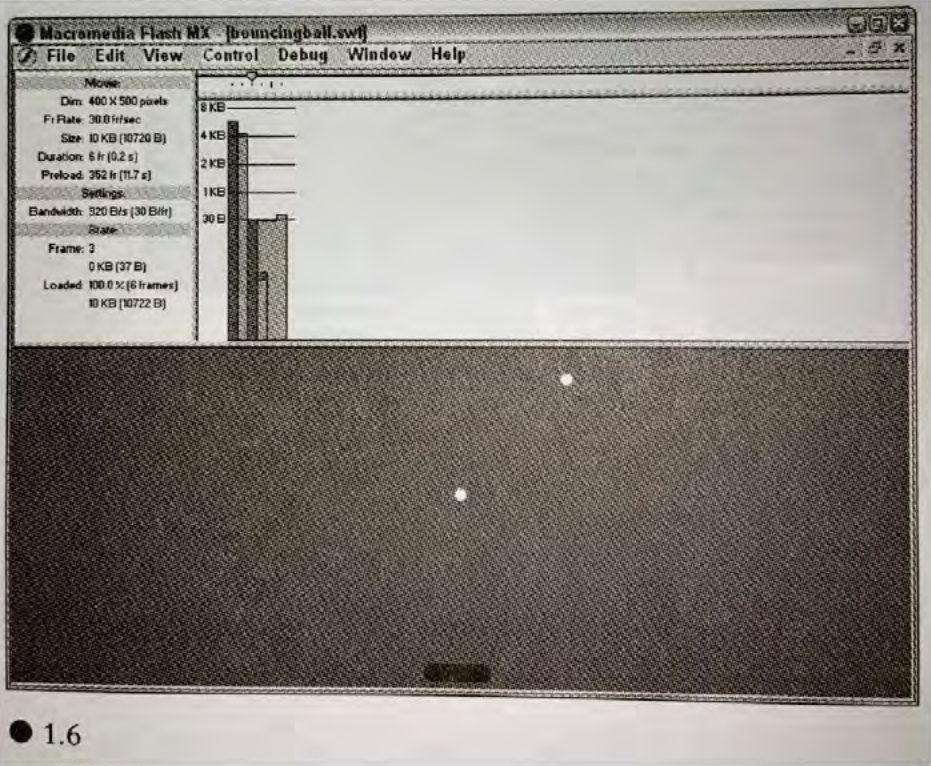
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'579 Claim 15	Reference/Combination
	<p>To test download performance: [¶] Do one of the following: [¶] Select Control > Test Scene or Control > Test Movie. [¶] If you test a scene or document, Flash publishes the current selection as a SWF file using the settings in the Publish Settings dialog box. (See “Publishing Flash documents” on page 281.) The SWF file opens in a new window and begins playing immediately. [¶] Select File > Open, and select a SWF file. [¶]</p> <p>Select View > Download Settings, and select a download speed to determine the streaming rate that Flash simulates: 14.4 Kbps, 28.8 Kbps, 56 Kbps, DSL, T1 or a User Setting. To enter your own User Setting, select Customize. [¶]</p> <p>When viewing the SWF file, select View > Bandwidth Profiler to display a graph of the downloading performance. [¶] The left side of the profiler displays information about the document, its settings, its state, and streams, if any are included in the document. [¶] The right section of the profiler shows the Timeline header and graph. In the graph, each bar represents an individual frame of the document. The size of the bar corresponds to that frame’s size in bytes. The red line beneath the Timeline header indicates whether a given frame streams in real time with the current modem speed set in the Control menu. If a bar extends above the red line, the document must wait for that frame to load. [¶]</p> <p>Select View > Simulate Download to turn streaming off or on. [¶] If you turn streaming off, the document starts over without simulating a web connection. [¶]</p> <p>Click a bar on the graph to display settings for the corresponding frame in the left window and stop the document. [¶]</p> <p>If necessary, adjust the view of the graph: [¶] Select View > Streaming Graph to show which frames cause pauses. This default view displays alternating light and dark gray blocks representing each frame. The side of each block indicates its relative byte size. The first frame stores a symbol’s contents, so it is often larger than other frames. [¶] Select View > Frame by Frame Graph to display the size of each frame. This view helps you see which frames contribute to streaming delays. If any frame block extends above the red line in the graph, the Flash Player halts playback until the entire frame downloads. [¶]</p> <p>Close the test window to return to the normal authoring environment. [¶] Once you’ve set up a test environment incorporating the Bandwidth Profiler, you can open any SWF file directly in test mode. The file</p>

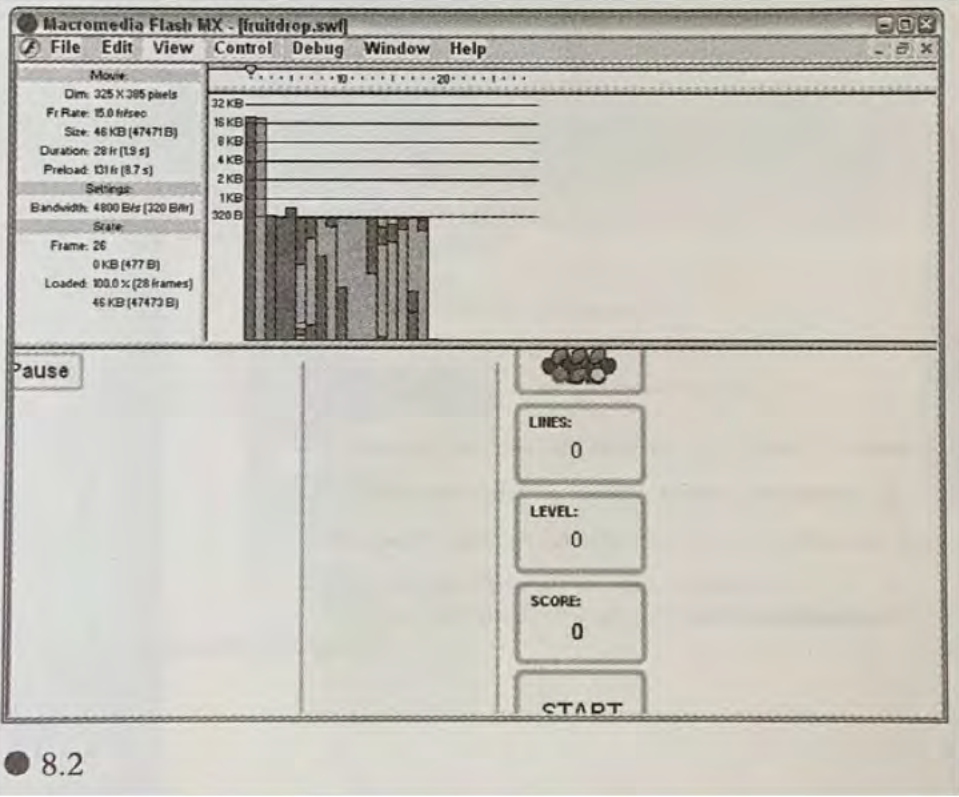
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'579 Claim 15	Reference/Combination
	<p>opens in a Flash Player window, using the Bandwidth Profiler and other selected viewing options. [¶] For more information on debugging your documents, see “Writing and Debugging Scripts” in ActionScript Reference Guide Help. [¶]</p> <p>To generate a report listing the amount of data in the final Flash Player file: [¶] Select File > Publish Settings and click the Flash tab. [¶] Select Generate Size Report. [¶] Click Publish. [¶]</p> <p>Flash generates a text file with the extension .txt. (If the document file is myMovie fla, the text file is myMovie Report.txt.) The report lists the size of each frame, shape, text, sound, video and ActionScript script by frame.</p> <p>[Flash MX 2004 Using Flash, p. 390]</p> <p>In addition, Flash files are compact, making them perfect for wireless carrier networks, where transfer rates range between 9.6 and 60 kilobytes per second (Kbps). Mobile devices, unlike desktop computers, have limited storage capability, so the small footprint of Flash is ideal.</p> <p>David discloses, via screenshots, the appearance of the Bandwidth Profiler.</p> <p>[David, p. 7]</p>

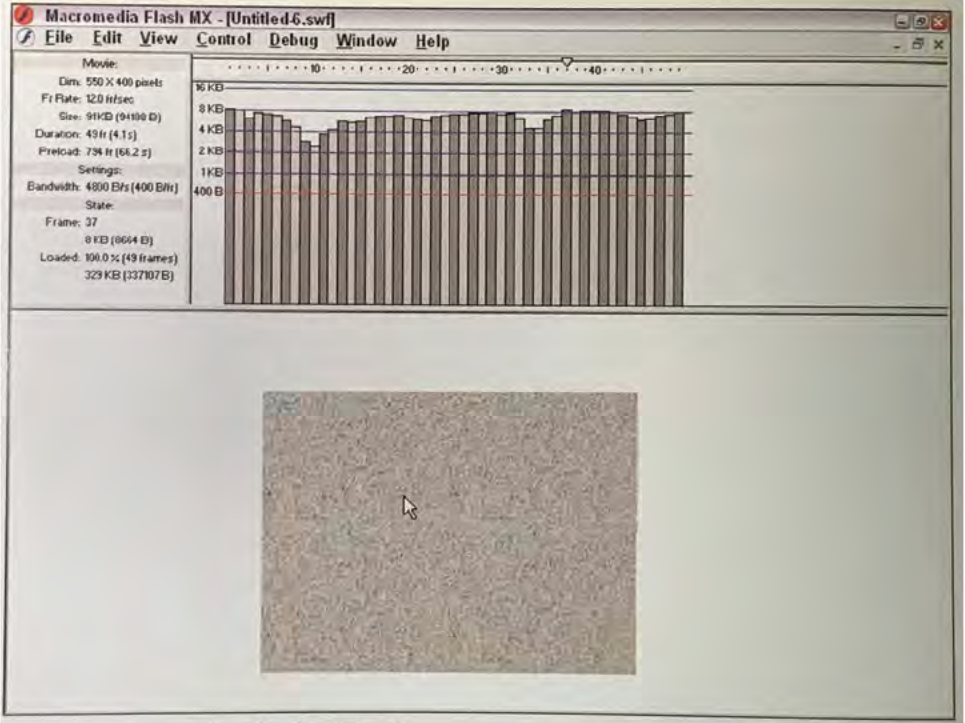
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*579 Claim 15	Reference/Combination
	<div><p>● 1.6</p><p>[David, p. 98]</p></div>

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'579 Claim 15	Reference/Combination
	 <p data-bbox="386 1344 470 1386">● 8.2</p> <p data-bbox="386 1423 1136 1449">[David, #18 of 32 unnumbered pages between pages numbered 192 and 193]</p>

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*579 Claim 15	Reference/Combination
	 <p>The screenshot shows the Macromedia Flash MX Professional 2004 interface. The title bar reads 'Macromedia Flash MX - [Untitled6.swf]'. The menu bar includes 'File', 'Edit', 'View', 'Control', 'Debug', 'Window', and 'Help'. The interface is divided into three main sections. The top-left section displays movie properties: Dimensions: 550 X 400 pixels, Frame Rate: 12.0 fps, Size: 911KB (94100 B), Duration: 49 fr (4.1 s), Preload: 794 fr (66.2 s), Settings: Bandwidth: 4800 B/s (400 B/fr), State: Frame: 37, 0 KB (0664 B), Loaded: 100.0 % (49 frames), 329 KB (327707 B). The top-right section features a timeline with a vertical playhead at frame 40 and a bar chart representing frame sizes. The bottom section is a large video player area displaying a noisy, textured image with a mouse cursor pointing at it.</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

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’579 Claim 15	Reference/Combination
<p>15[f] initiate transmission of the application on a simulation of the mobile device, or to the physical mobile device, or both.</p>	<p>The Flash MX Professional 2004 system discloses this limitation.</p> <p>For example, the Bandwidth Profiler in Flash MX Professional 2004 initiates publishing a SWF file (the application) and transmitting it in the Test Movie environment (on a simulation of the mobile device) in order to profile the Flash application’s bandwidth usage.</p> <p>[Flash MX 2004 Using Flash, pp. 38–39]</p> <p>The Flash Player attempts to meet the frame rate you set; the actual frame rate during playback can vary on different computers. If a document that is downloading reaches a particular frame before the frame’s required data has downloaded, the document pauses until the data arrives. [¶]</p> <p>To view downloading performance graphically, you can use the Bandwidth Profiler, which shows how much data is sent for each frame according to the modem speed you specify. The Bandwidth Profiler is divided into two panes. The left pane shows information about the document, the download settings, the state, and streams, if any are included. The right pane shows information about individual frames in the document. [¶]</p> <p>In simulating the downloading speed, Flash uses estimates of typical Internet performance, not the exact modem speed. For example, if you choose to simulate a modem speed of 28.8 Kbps, Flash sets the actual rate to 2.3 Kbps to reflect typical Internet performance. The profiler also compensates for the added compression support for SWF files, which reduces the file size and improves streaming performance. [¶]</p> <p>When external SWF files, GIF and XML files, and variables are streamed into a player by using ActionScript calls such as loadMovie and getUrl, the data flows at the rate set for streaming. The stream rate for the main SWF file is reduced based on the reduction of bandwidth caused by the additional data requests. It’s helpful to test your document at each speed you intend to support, and on each computer you intend to support. This helps you ensure that the document doesn’t overburden the slowest connection and computer it is designed for. [¶]</p> <p>You can also generate a report of frames that are slowing playback, and then optimize or eliminate some of the content in those frames. See “Optimizing Flash documents” on page 36. [¶]</p>

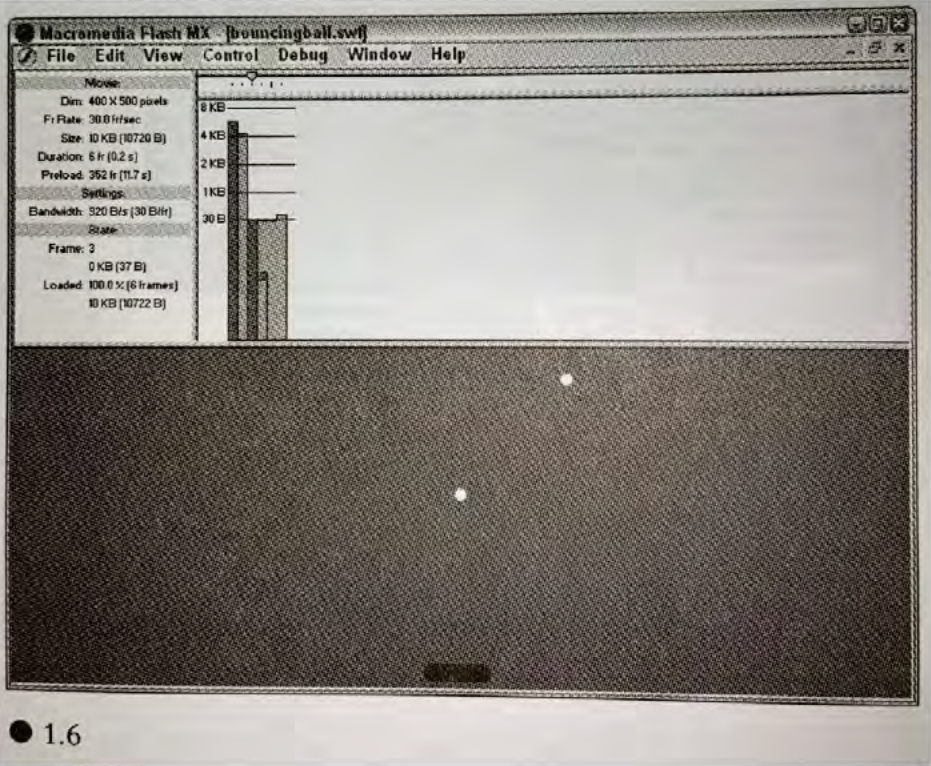
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579 Claim 15	Reference/Combination
	<p>To change the settings for the SWF file created using the Test Movie and Test Scene commands, use File > Publish Settings. See “Publishing Flash documents” on page 281. [¶]</p> <p>To test download performance: [¶] Do one of the following: [¶] Select Control > Test Scene or Control > Test Movie. [¶] If you test a scene or document, Flash publishes the current selection as a SWF file using the settings in the Publish Settings dialog box. (See “Publishing Flash documents” on page 281.) The SWF file opens in a new window and begins playing immediately. [¶] Select File > Open, and select a SWF file. [¶]</p> <p>Select View > Download Settings, and select a download speed to determine the streaming rate that Flash simulates: 14.4 Kbps, 28.8 Kbps, 56 Kbps, DSL, T1 or a User Setting. To enter your own User Setting, select Customize. [¶]</p> <p>When viewing the SWF file, select View > Bandwidth Profiler to display a graph of the downloading performance. [¶] The left side of the profiler displays information about the document, its settings, its state, and streams, if any are included in the document. [¶] The right section of the profiler shows the Timeline header and graph. In the graph, each bar represents an individual frame of the document. The size of the bar corresponds to that frame’s size in bytes. The red line beneath the Timeline header indicates whether a given frame streams in real time with the current modem speed set in the Control menu. If a bar extends above the red line, the document must wait for that frame to load. [¶]</p> <p>Select View > Simulate Download to turn streaming off or on. [¶] If you turn streaming off, the document starts over without simulating a web connection. [¶]</p> <p>Click a bar on the graph to display settings for the corresponding frame in the left window and stop the document. [¶]</p> <p>If necessary, adjust the view of the graph: [¶] Select View > Streaming Graph to show which frames cause pauses. This default view displays alternating light and dark gray blocks representing each frame. The side of each block indicates its relative byte size. The first frame stores a symbol’s contents, so it is often larger than other frames. [¶] Select View > Frame by Frame Graph to display the size of each frame. This view helps you see which frames contribute to streaming delays. If any frame block extends above the red line in the graph, the Flash Player halts playback until the entire frame downloads. [¶]</p>

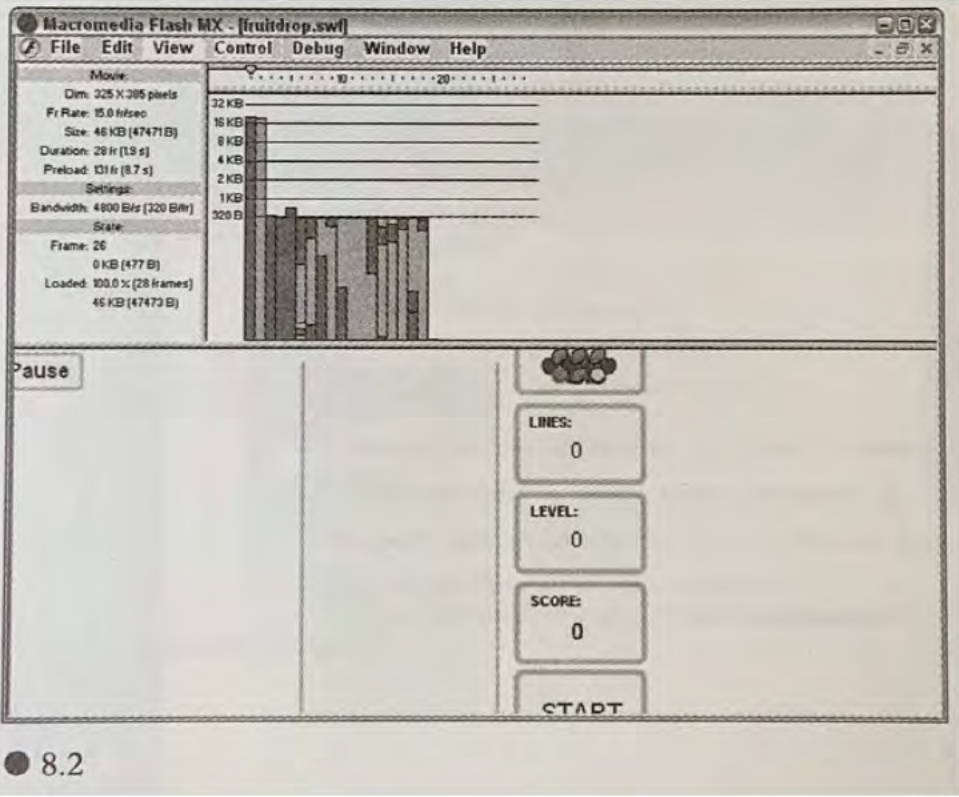
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'579 Claim 15	Reference/Combination
	<p data-bbox="378 632 1458 772">Close the test window to return to the normal authoring environment. [¶] Once you've set up a test environment incorporating the Bandwidth Profiler, you can open any SWF file directly in test mode. The file opens in a Flash Player window, using the Bandwidth Profiler and other selected viewing options. [¶] For more information on debugging your documents, see "Writing and Debugging Scripts" in ActionScript Reference Guide Help. [¶]</p> <p data-bbox="378 804 1458 856">To generate a report listing the amount of data in the final Flash Player file: [¶] Select File > Publish Settings and click the Flash tab. [¶] Select Generate Size Report. [¶] Click Publish. [¶]</p> <p data-bbox="378 888 1466 972">Flash generates a text file with the extension .txt. (If the document file is myMovie.fla, the text file is myMovie Report.txt.) The report lists the size of each frame, shape, text, sound, video and ActionScript script by frame.</p> <p data-bbox="378 1003 753 1024">[Flash MX 2004 Using Flash, p. 390]</p> <p data-bbox="378 1031 1442 1115">In addition, Flash files are compact, making them perfect for wireless carrier networks, where transfer rates range between 9.6 and 60 kilobytes per second (Kbps). Mobile devices, unlike desktop computers, have limited storage capability, so the small footprint of Flash is ideal.</p> <p data-bbox="378 1199 1122 1220">David discloses, via screenshots, the appearance of the Bandwidth Profiler.</p> <p data-bbox="378 1255 505 1276">[David, p. 7]</p>

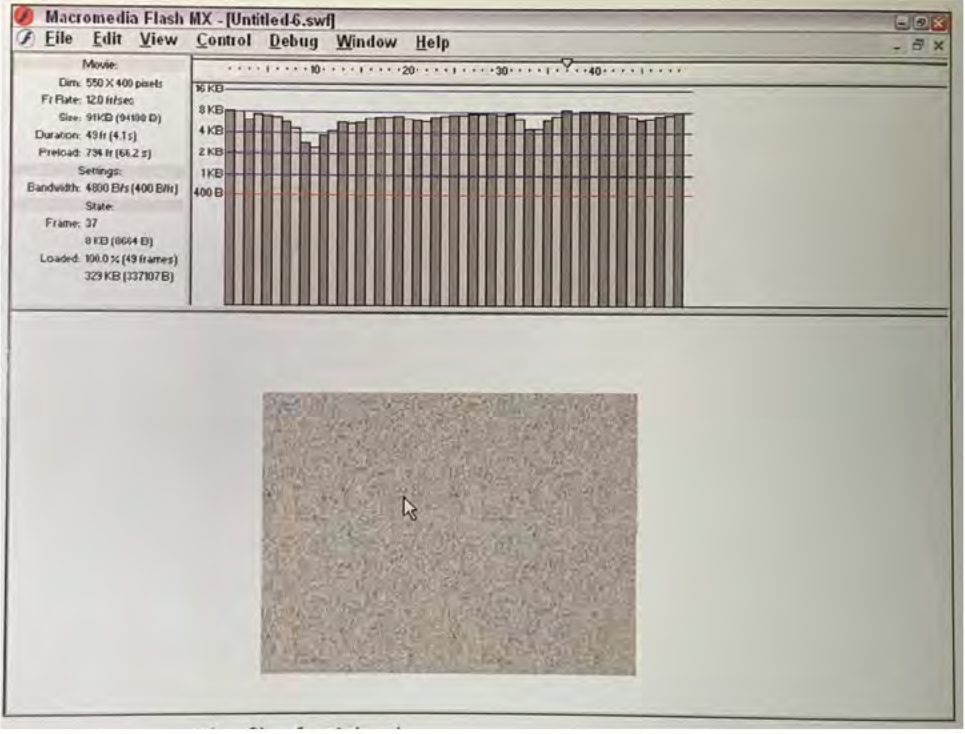
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*579 Claim 15	Reference/Combination
	<div><p>● 1.6</p><p>[David, p. 98]</p></div>


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579 Claim 15	Reference/Combination
	 <p data-bbox="386 1423 1136 1451">[David, #18 of 32 unnumbered pages between pages numbered 192 and 193]</p>

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579 Claim 15	Reference/Combination
	 <p>For example, Flash MX Professional 2004 initiates publishing a SWF file (the application) for transmission on the NTT DoCoMo i-mode HTML Simulator (on a simulation of the mobile device).</p>

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*579 Claim 15	Reference/Combination
	<p data-bbox="378 604 1430 657">[Flash MX Professional 2004 Flash Lite Authoring Guidelines for the i-mode Service by NTT DoCoMo, p. 22]</p> <p data-bbox="378 657 1455 827">To use the i-mode HTML Simulator: [¶] 1 Download and install the i-mode HTML Simulator application from the DoCoMo website (for a link to the website, see Appendix D, “References,” on page 47). Follow the online instructions. Note the folder where the program files are installed. [¶] 2 Start the i-mode HTML Simulator application. In Windows Explorer, or another program displaying filenames or icons, go to the folder where the Simulator program files are installed (noted in step 1) and double-click CSim.exe. The i-mode HTML Simulator application window appears: [¶]</p>  <p data-bbox="378 1396 1442 1482">You can click the Simulator keys with your mouse and the keys will operate in the same way as they would on an actual i-mode phone. The Select key is the key with a circle icon, surrounded by the arrow keys, immediately under the screen display.</p>

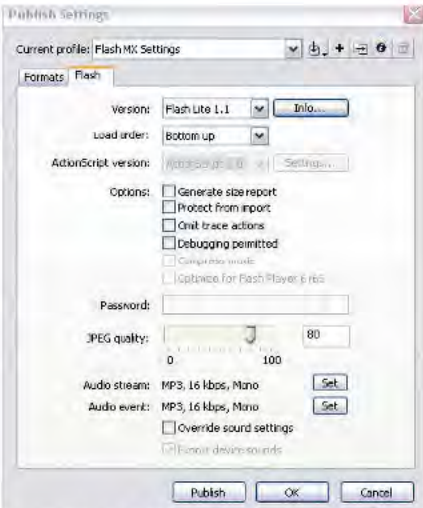
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*579 Claim 15	Reference/Combination
	<p>[Flash MX Professional 2004 Flash Lite Authoring Guidelines for the i-mode Service by NTT DoCoMo, p. 23]</p> <p>The following function menu options for testing your Flash Lite movies are available: [¶] Open URL[:] Enables you to type in the URL of the file you want the Simulator to test. You can also browse for a file on your local computer or use a bookmark. (A bookmark is a shortcut for a file URL or pathname.)</p> <p>For example, Flash MX Professional 2004 initiates transmission of the Flash application to the physical mobile device, such as an actual 505i phone, using desktop-to-phone synchronization software.</p> <p>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, p. 49] Select File > Publish to save the SWF file as FlashLiteTest.swf. [¶] In the mobile phone web browser or from a desktop that can transfer a file using desktop-to-phone synchronization software, transfer the file to the mobile phone and verify that it works correctly.</p> <p>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, p. 51] Test your Macromedia Flash Lite 1.1 SWF content frequently on actual mobile phones. This step may seem obvious, but it is often overlooked. It is especially important when you develop Flash Lite 1.1 SWF files for mobile phones. No matter how much phone emulation you do, the final delivery remains the most important part of the development cycle. Emulation is helpful for much of the testing, but it is no substitute for testing on actual mobile phones.</p> <p>[Flash MX Professional 2004 Flash Lite Authoring Guidelines for the i-mode Service by NTT DoCoMo, p. 21] Test your Flash Lite movies frequently on actual 505i phones. This advice may sound obvious, but this step is often overlooked and is especially important for developing Flash Lite movies for i-mode phones. No matter how much phone emulation a developer does, the final delivery remains the most important step in the development cycle. Emulation is helpful for much of the testing, but it is no substitute for testing on actual 505i phones. [¶]</p>

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	<p>For basic information on how to use Flash MX Professional 2004 to author and preview Flash Lite movies created for playing on phones, please refer to the Macromedia Flash MX Professional 2004 User Guide for Flash Lite . [¶] You should use the following to test your Flash Lite movie for i-mode phones:</p> <ul style="list-style-type: none">• The test movie Flash Lite Player (invoked during the Test Movie process)• The stand-alone Flash Lite simulator• The i-mode HTML Simulator from DoCoMo• Flash Lite on the manufacturer's i-mode phone <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

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*579 Claim 16	Reference/Combination
<p>16[a] The medium of claim 15, wherein the instructions initiate loading of at least one of the one or more characteristics from at least one of a remote server and a computer-readable media, wherein the physical mobile device is connected to at least one of the internet, a wireless network and the remote server, to enable a user to interact with and test the application.</p>	<p>The Flash MX Professional 2004 system discloses this limitation.</p>  <p>Screenshot of Flash MX Professional 2004 selecting Flash Player version from computer-readable media.</p> <p>For example, Flash MX Professional 2004 initiates loading of at least one of the one or more characteristics from at least one of a remote server and a computer-readable media.</p> <p>For example, Flash MX Professional 2004 selects a Flash Player version. A mobile device may support one or more versions of Flash Player, so a Flash Player version is a characteristic associated with a mobile device. This characteristic is loaded from file (from a remote server and/or a computer-readable media).</p>

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	<p>[Flash MX 2004 Using Flash, p. 282] Click the Flash tab and select a Player version from the Version pop-up menu. Not all Macromedia Flash MX 2004 and Macromedia Flash MX Professional 2004 features work in published SWF files that target Flash Player versions earlier than Flash Player 7. If you want to specific Flash Player detection, on the HTML tab of the Publish Settings dialog box, you must select Flash Player 4 or a later version. For more information about Flash Player detection, see “Configuring publish settings for Flash Player detection” on page 287.</p> <p>[Flash MX 2004 Using Flash, p. 287] You can configure your document to detect your users’ Flash Player version. If you’ve selected Detect Flash Version in the Publish Settings dialog box, users who access your Flash application are transparently directed to an HTML file that contains a SWF file designed to detect their Flash Player version. If they have the specified version or later, the SWF file again redirects the user to your content HTML file, and your SWF file plays as designed. If users don’t have the specified version, they’re redirected to an alternate HTML file that Flash creates, or that you’ve created.</p> <p>[Perry] New Features for Mobile and Devices Developers [¶] Both products offer the new mobile devices templates, however, only Macromedia Flash MX Professional 2004 provides functionality specific to mobile device development: Mobile devices templates MIDI ring tone support Test device emulators Alias text support [¶]</p> <p>In the following section, I’ll give you a little more information about these new features and what they mean to you. [¶]</p> <p>Authoring Content for Devices [¶] Exporting Content for Various Versions of Macromedia Flash Player [¶] When authoring for mobile devices, you need to use the correct Macromedia Flash publish settings based on the Macromedia Flash Player requirements of your target device. For more information on some of the</p>

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	<p>devices that play Macromedia Flash content, refer to the Mobile and Devices Developer Center for a list of devices and content development kits for each. [¶]</p> <p>To customize your Macromedia Flash publish settings, you can select an option from the Flash tab of the Publish Settings window. You can access this window in three different ways:</p> <p>Select File > Publish Settings.</p> <p>Press the Settings button on the Property inspector with the Stage selected.</p> <p>Use a keyboard shortcut: Control-Shift-F12. [¶]</p>

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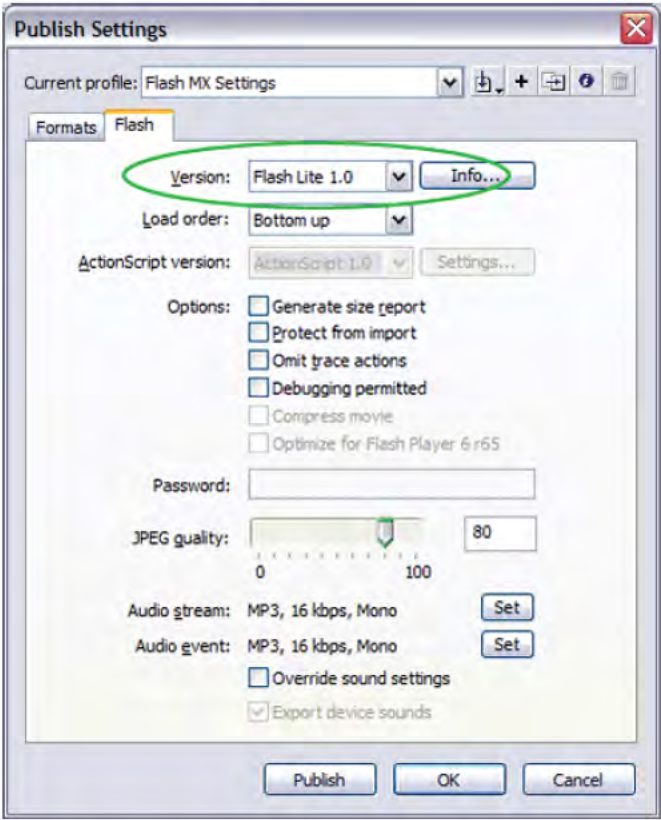
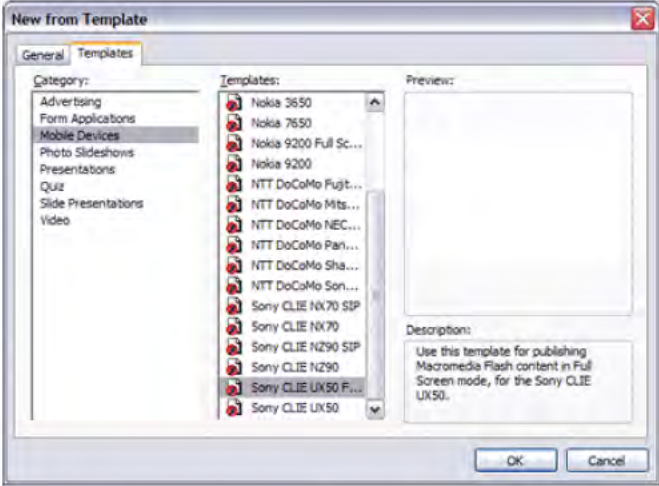

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	<div data-bbox="378 625 1034 1440">The image shows the 'Publish Settings' dialog box from Macromedia Flash. The 'Flash' tab is selected. The 'Current profile' is 'Flash MX Settings'. The 'Version' is set to 'Flash Lite 1.0', which is circled in green. The 'Load order' is 'Bottom up'. The 'ActionScript version' is 'ActionScript 1.0'. There are several options: 'Generate size report' (unchecked), 'Protect from import' (unchecked), 'Omit trace actions' (unchecked), 'Debugging permitted' (unchecked), 'Compress movie' (unchecked), and 'Optimize for Flash Player 6 r65' (unchecked). The 'Password' field is empty. The 'JPEG quality' is set to 80. The 'Audio stream' and 'Audio event' are both set to 'MP3, 16 kbps, Mono'. There are 'Set' buttons for each audio setting. The 'Override sound settings' checkbox is unchecked, and the 'Export device sounds' checkbox is checked. At the bottom are 'Publish', 'OK', and 'Cancel' buttons.</div>

Figure 2. Macromedia Flash publish settings. [¶]

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	<p>If you're using the built-in templates for devices, then Flash presets the Flash Player publish settings for each device. However, if you're not using the templates, then you'll need to be ensure that you customize the settings for your device. [¶] The only setting you need to change is the Version setting. Select the proper version of Macromedia Flash Player in the pop-up menu. The rest of the settings are optional and you can refer to the Flash MX Professional 2004 Help panel for additional information on them. [...]</p> <p>Device Templates [¶] New to Macromedia Flash MX Professional 2004 and Macromedia Flash MX 2004 are 22 templates you can use to create content for all of the currently supported mobile devices. You can access them from the Flash start page or by selecting File > New. Click the Template tab in the New from Template dialog box (Figure 6) and select Mobile Devices in the Category pane. [¶]</p>  <p>Figure 6. Mobile Devices templates. [¶]</p>

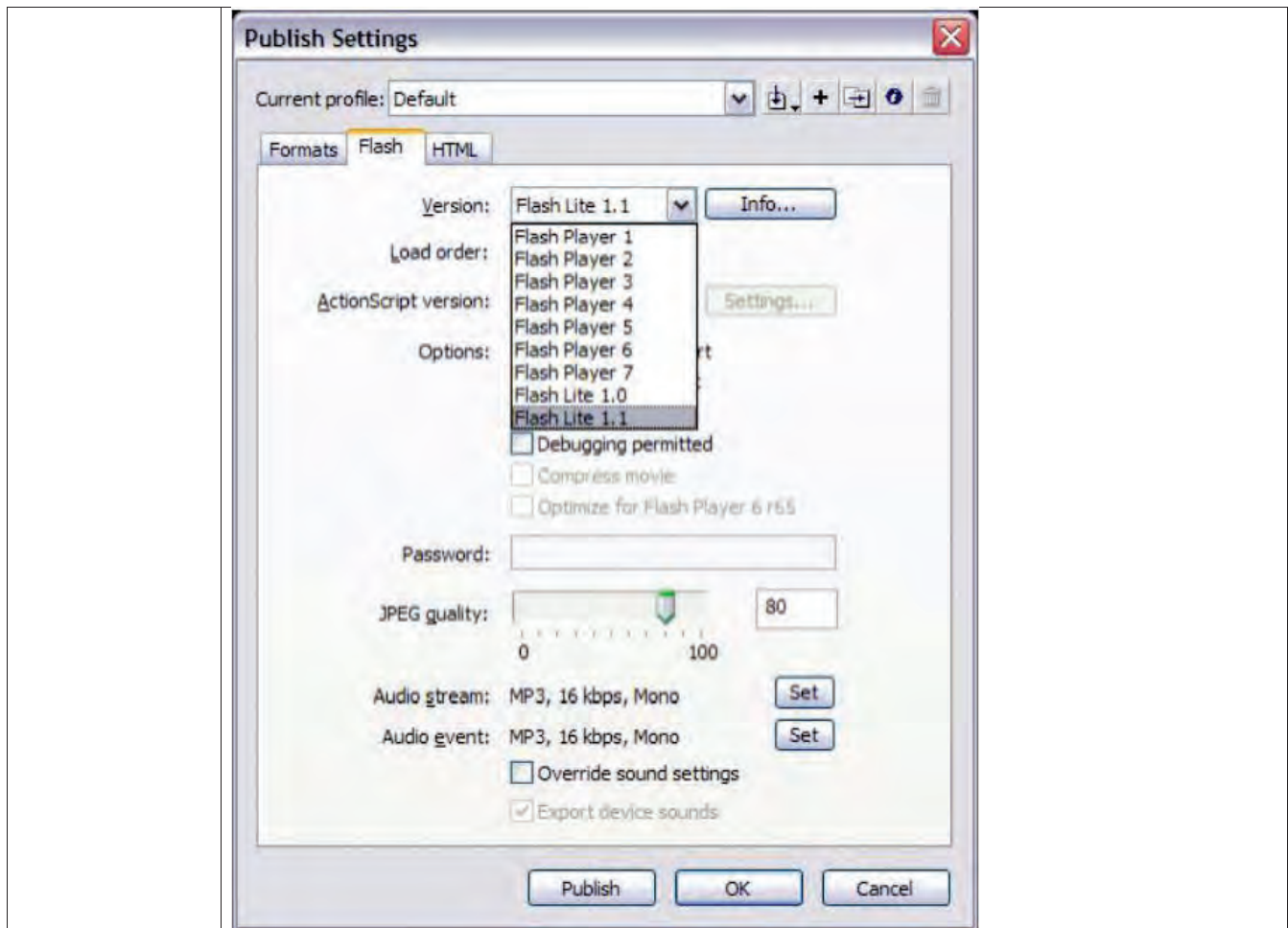
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	<p>These templates take the guess work out of developing Macromedia Flash content for specific platforms. They set the correct stage size, load a full-size image of the specific device in a guide layer, and preset the correct Flash publishing settings. All you need to do is to create the content based on the development kit recommendations for each platform. You can find content development kits for each platform in the Macromedia Mobile and Devices Developer Center. [¶]</p> <p>For example, if you open up the iPAQ 5440 Full Screen template, here's what you will see: [¶]</p>  <p>Figure 7. iPAQ 5440 Full Screen template opened in the authoring environment. [¶]</p> <p>Be sure to use these templates when creating content for mobile devices—they'll definitely save you time.</p> <p>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, p. 24]</p>

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*579 Claim 16	Reference/Combination
	<p>For example, Flash MX Professional 2004 loads Flash Player characteristics, such as Flash Lite 1.1, from file (from a remote server and/or a computer-readable media).</p> <p>[<i>Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines</i>, p. 7]</p> <p>To create content for mobile phones, you must have the following items on your computer:</p> <ul style="list-style-type: none"> • The latest version of Macromedia Flash MX Professional 2004 (7.0.1) • The new FlashLite1_1.dll (FlashLite1_1.dmg on the Mac) file for testing Flash applications in the Flash Lite 1.1 authoring environment • The new FlashLite1_1.xml file for publishing Flash Lite 1.1 SWF files • The DevicesMsg.cfg configuration file for customizing the features that are supported in Flash Lite 1.1. <p>For example, Flash MX Professional 2004 selects a frame rate and stage size (screen size), both characteristics associated with a mobile device. These characteristics are loaded from file (on a remote server and/or computer-readable media).</p> <p>[<i>Flash MX 2004 Using Flash</i>, p. 10]</p> <p>2. For Frame Rate, enter the number of animation frames to be displayed every second. For most computer-displayed animations, especially those playing from a website, 8 fps (frames per second) to 12 fps is sufficient (12 fps is the default frame rate). [¶] 3. For Dimensions, do one of the following: [¶] ■ To specify the Stage size in pixels, enter values in the Width and Height text boxes. The default document size is 550 x 400 pixels. The minimum size is 1 x 1 pixels; the maximum is 2880 x 2880 pixels.</p> <p>For example, Flash MX Professional 2004 is software. See disclosures for claim limitation 15[a] (hereby incorporated by reference). In software, characteristics are loaded from at least one of a remote server and a computer-readable media.</p>

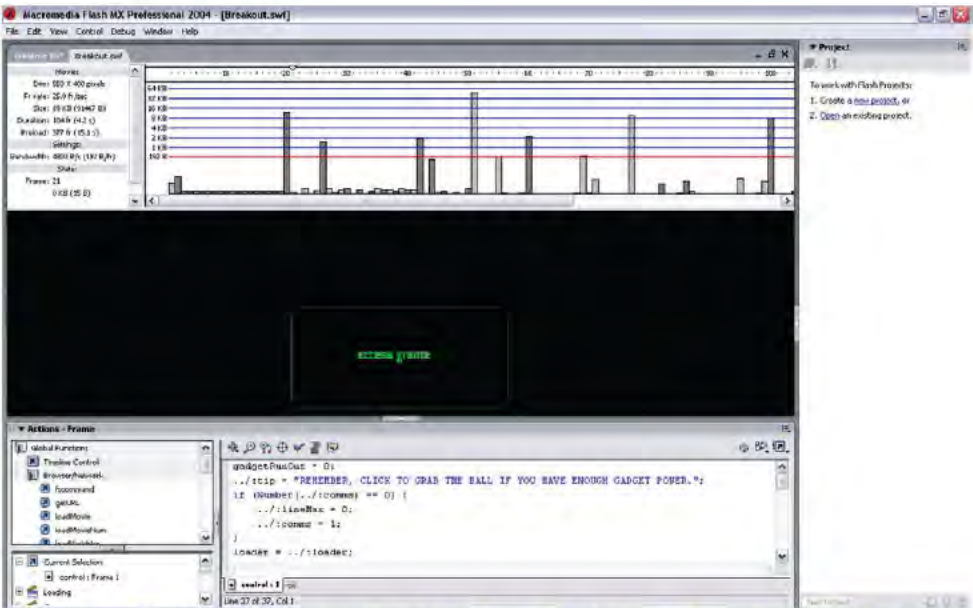
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*579 Claim 16	Reference/Combination
	<p>In addition, for example, Flash MX Professional 2004 discloses an actual mobile phone (physical mobile device), such as a 505i phone, with a web browser connected to the internet, a wireless network, and/or the remote server, enabling a user to interact with and test the application.</p> <p>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, p. 49] Select File > Publish to save the SWF file as FlashLiteTest.swf. ¶ In the mobile phone web browser or from a desktop that can transfer a file using desktop-to-phone synchronization software, transfer the file to the mobile phone and verify that it works correctly.</p> <p>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, p. 51] Test your Macromedia Flash Lite 1.1 SWF content frequently on actual mobile phones. This step may seem obvious, but it is often overlooked. It is especially important when you develop Flash Lite 1.1 SWF files for mobile phones. No matter how much phone emulation you do, the final delivery remains the most important part of the development cycle. Emulation is helpful for much of the testing, but it is no substitute for testing on actual mobile phones.</p> <p>[Flash MX Professional 2004 Flash Lite Authoring Guidelines for the i-mode Service by NTT DoCoMo, p. 21] Test your Flash Lite movies frequently on actual 505i phones. This advice may sound obvious, but this step is often overlooked and is especially important for developing Flash Lite movies for i-mode phones. No matter how much phone emulation a developer does, the final delivery remains the most important step in the development cycle. Emulation is helpful for much of the testing, but it is no substitute for testing on actual 505i phones. ¶</p> <p>For basic information on how to use Flash MX Professional 2004 to author and preview Flash Lite movies created for playing on phones, please refer to the Macromedia Flash MX Professional 2004 User Guide for Flash Lite . ¶ You should use the following to test your Flash Lite movie for i-mode phones:</p> <ul style="list-style-type: none"> • The test movie Flash Lite Player (invoked during the Test Movie process) • The stand-alone Flash Lite simulator

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	<ul style="list-style-type: none">• The i-mode HTML Simulator from DoCoMo• Flash Lite on the manufacturer's i-mode phone <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

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*579 Claim 17	Reference/Combination
<p>17[a] The medium of claim 15, wherein the software instructions include identifying one or more areas of code, or functions, or both of the application responsible for utilization of a specific displayed resource at a given time.</p>	<p>The Flash MX Professional 2004 system discloses this limitation.</p>  <p>Screenshot of Flash MX Professional 2004 interface with "Actions – Frame" window showing the state of the Flash application at frame 21, including an ActionScript script, and indicating the use of bandwidth per frame of the application.</p>

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	<p>For example, the Bandwidth Profiler in Flash MX Professional 2004 identifies the ActionScript, symbols, function calls, and graphical assets (one or more areas of code, or functions, or both) of the Flash application responsible for utilization of bandwidth at a given frame (a given time).</p> <p>[<i>Flash MX 2004 Using Flash</i>, pp. 38–39]</p> <p>The Flash Player attempts to meet the frame rate you set; the actual frame rate during playback can vary on different computers. If a document that is downloading reaches a particular frame before the frame's required data has downloaded, the document pauses until the data arrives. [¶]</p> <p>To view downloading performance graphically, you can use the Bandwidth Profiler, which shows how much data is sent for each frame according to the modem speed you specify. The Bandwidth Profiler is divided into two panes. The left pane shows information about the document, the download settings, the state, and streams, if any are included. The right pane shows information about individual frames in the document. [¶]</p> <p>In simulating the downloading speed, Flash uses estimates of typical Internet performance, not the exact modem speed. For example, if you choose to simulate a modem speed of 28.8 Kbps, Flash sets the actual rate to 2.3 Kbps to reflect typical Internet performance. The profiler also compensates for the added compression support for SWF files, which reduces the file size and improves streaming performance. [¶]</p> <p>When external SWF files, GIF and XML files, and variables are streamed into a player by using ActionScript calls such as loadMovie and getUrl, the data flows at the rate set for streaming. The stream rate for the main SWF file is reduced based on the reduction of bandwidth caused by the additional data requests. It's helpful to test your document at each speed you intend to support, and on each computer you intend to support. This helps you ensure that the document doesn't overburden the slowest connection and computer it is designed for. [¶]</p> <p>You can also generate a report of frames that are slowing playback, and then optimize or eliminate some of the content in those frames. See "Optimizing Flash documents" on page 36. [¶]</p> <p>To change the settings for the SWF file created using the Test Movie and Test Scene commands, use File > Publish Settings. See "Publishing Flash documents" on page 281. [¶]</p>

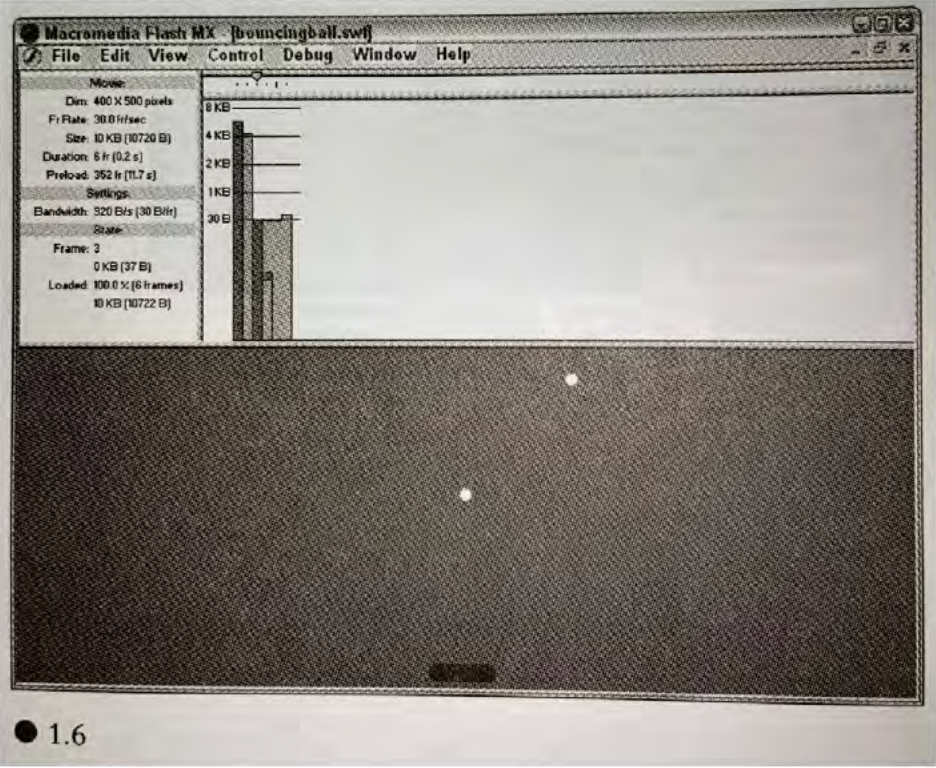
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'579 Claim 17	Reference/Combination
	<p>To test download performance: [¶] Do one of the following: [¶] Select Control > Test Scene or Control > Test Movie. [¶] If you test a scene or document, Flash publishes the current selection as a SWF file using the settings in the Publish Settings dialog box. (See “Publishing Flash documents” on page 281.) The SWF file opens in a new window and begins playing immediately. [¶] Select File > Open, and select a SWF file. [¶]</p> <p>Select View > Download Settings, and select a download speed to determine the streaming rate that Flash simulates: 14.4 Kbps, 28.8 Kbps, 56 Kbps, DSL, T1 or a User Setting. To enter your own User Setting, select Customize. [¶]</p> <p>When viewing the SWF file, select View > Bandwidth Profiler to display a graph of the downloading performance. [¶] The left side of the profiler displays information about the document, its settings, its state, and streams, if any are included in the document. [¶] The right section of the profiler shows the Timeline header and graph. In the graph, each bar represents an individual frame of the document. The size of the bar corresponds to that frame’s size in bytes. The red line beneath the Timeline header indicates whether a given frame streams in real time with the current modem speed set in the Control menu. If a bar extends above the red line, the document must wait for that frame to load. [¶]</p> <p>Select View > Simulate Download to turn streaming off or on. [¶] If you turn streaming off, the document starts over without simulating a web connection. [¶]</p> <p>Click a bar on the graph to display settings for the corresponding frame in the left window and stop the document. [¶]</p> <p>If necessary, adjust the view of the graph: [¶] Select View > Streaming Graph to show which frames cause pauses. This default view displays alternating light and dark gray blocks representing each frame. The side of each block indicates its relative byte size. The first frame stores a symbol’s contents, so it is often larger than other frames. [¶] Select View > Frame by Frame Graph to display the size of each frame. This view helps you see which frames contribute to streaming delays. If any frame block extends above the red line in the graph, the Flash Player halts playback until the entire frame downloads. [¶]</p> <p>Close the test window to return to the normal authoring environment. [¶] Once you’ve set up a test environment incorporating the Bandwidth Profiler, you can open any SWF file directly in test mode. The file</p>

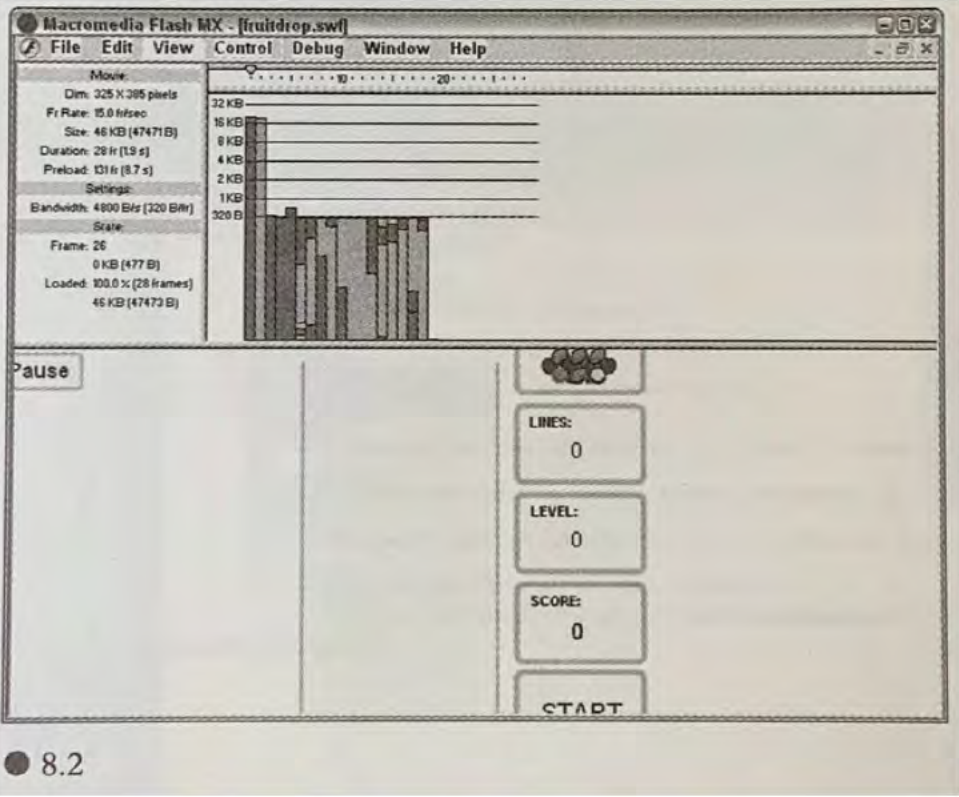
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	<p>opens in a Flash Player window, using the Bandwidth Profiler and other selected viewing options. [¶] For more information on debugging your documents, see “Writing and Debugging Scripts” in ActionScript Reference Guide Help. [¶]</p> <p>To generate a report listing the amount of data in the final Flash Player file: [¶] Select File > Publish Settings and click the Flash tab. [¶] Select Generate Size Report. [¶] Click Publish. [¶]</p> <p>Flash generates a text file with the extension .txt. (If the document file is myMovie.fla, the text file is myMovie Report.txt.) The report lists the size of each frame, shape, text, sound, video and ActionScript script by frame.</p> <p>[Flash MX 2004 Using Flash, p. 390]</p> <p>In addition, Flash files are compact, making them perfect for wireless carrier networks, where transfer rates range between 9.6 and 60 kilobytes per second (Kbps). Mobile devices, unlike desktop computers, have limited storage capability, so the small footprint of Flash is ideal.</p> <p>David discloses, via screenshots, the appearance of the Bandwidth Profiler.</p> <p>[David, p. 7]</p>

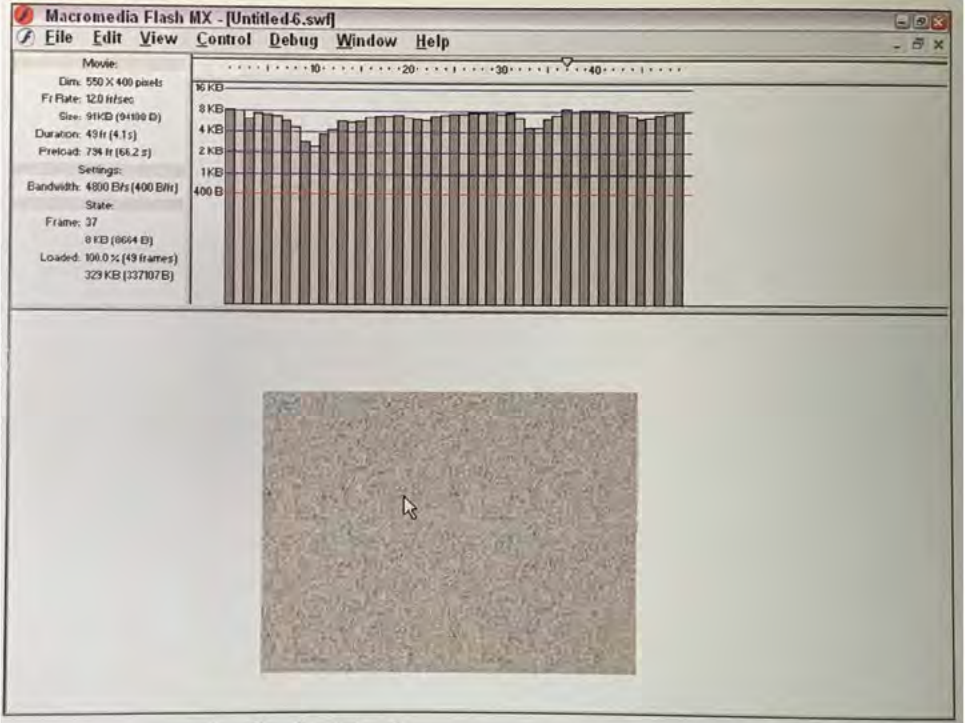
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*579 Claim 17	Reference/Combination
	<div></div>

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'579 Claim 17	Reference/Combination
	 <p>Macromedia Flash MX - [fruitdrop.swf]</p> <p>File Edit View Control Debug Window Help</p> <p>Movie: Dim: 325 X 285 pixels Fr Rate: 15.0 fps/sec Size: 46 KB (47471 B) Duration: 20 fr (1.3 s) Preload: 131 fr (8.7 s) Settings: Bandwidth: 4800 B/s (320 B/fr) Scale: Frame: 26 0 KB (477 B) Loaded: 100.0 % (26 frames) 46 KB (47473 B)</p> <p>32 KB 16 KB 8 KB 4 KB 2 KB 1 KB 320 B</p> <p>Pause</p> <p>LINES: 0</p> <p>LEVEL: 0</p> <p>SCORE: 0</p> <p>START</p> <p>8.2</p> <p>[David, #18 of 32 unnumbered pages between pages numbered 192 and 193]</p>

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*579 Claim 17	Reference/Combination
	 <p>The screenshot shows the Macromedia Flash MX Professional 2004 interface. The top menu bar includes File, Edit, View, Control, Debug, Window, and Help. The main workspace is divided into two sections. The top section displays a timeline with a vertical axis on the left labeled 'Movie' and a horizontal axis at the top. The vertical axis has markers for 400 B, 1 KB, 2 KB, 4 KB, 8 KB, and 16 KB. The horizontal axis has markers for 10, 20, 30, and 40. The timeline shows a series of vertical bars representing frames. The bottom section is a large rectangular area containing a video player with a textured, grainy background and a mouse cursor pointing at it.</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

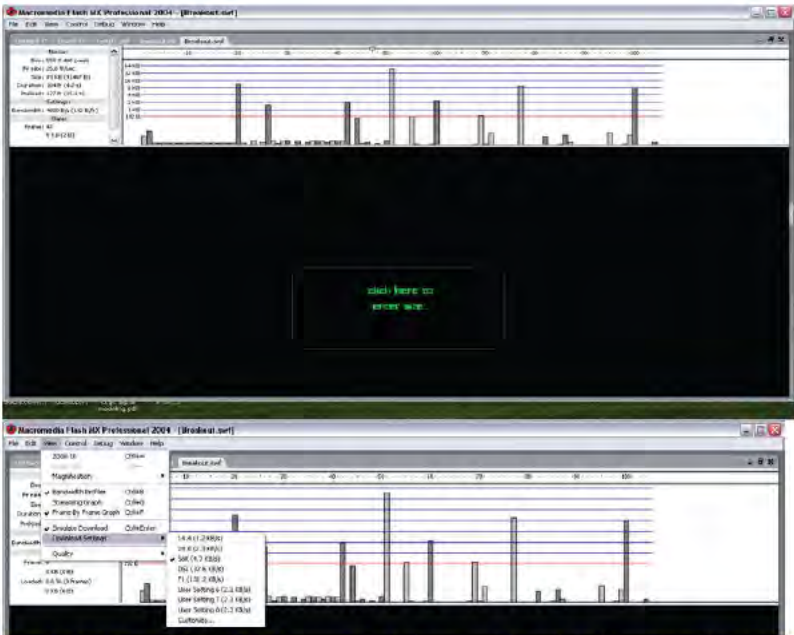
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’579 Claim 18	Reference/Combination
18[a] The medium of claim 15, wherein the characteristics include bandwidth information.	<p>The Flash MX Professional 2004 system discloses this limitation.</p> <p>For example, Flash MX Professional 2004 selects a modem speed and typical Internet performance (bandwidth information). See disclosures for claim limitation 15[b] (hereby incorporated by reference).</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC’s Invalidity Contentions.</p>

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*579 Claim 19	Reference/Combination
<p>19[a] The medium of claim 18, wherein the instructions simulate one or more network events that occur when interacting with a wireless network.</p>	<p>The Flash MX Professional 2004 system discloses this limitation.</p>  <p>Flash MX Professional 2004 screenshot showing “Simulate Download” in the Bandwidth Profiler.</p> <p>For example, the Bandwidth Profiler in Flash MX Professional 2004 simulates a download, a web connection, compression, streams, typical Internet performance, and additional data requests (one or more</p>

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	<p>network events) that occur when loading and playing the Flash application within a browser (when interacting with a wireless network).</p> <p>[<i>Flash MX 2004 Using Flash</i>, pp. 38–39]</p> <p>The Flash Player attempts to meet the frame rate you set; the actual frame rate during playback can vary on different computers. If a document that is downloading reaches a particular frame before the frame’s required data has downloaded, the document pauses until the data arrives. [¶]</p> <p>To view downloading performance graphically, you can use the Bandwidth Profiler, which shows how much data is sent for each frame according to the modem speed you specify. The Bandwidth Profiler is divided into two panes. The left pane shows information about the document, the download settings, the state, and streams, if any are included. The right pane shows information about individual frames in the document. [¶]</p> <p>In simulating the downloading speed, Flash uses estimates of typical Internet performance, not the exact modem speed. For example, if you choose to simulate a modem speed of 28.8 Kbps, Flash sets the actual rate to 2.3 Kbps to reflect typical Internet performance. The profiler also compensates for the added compression support for SWF files, which reduces the file size and improves streaming performance. [¶]</p> <p>When external SWF files, GIF and XML files, and variables are streamed into a player by using ActionScript calls such as loadMovie and getUrl, the data flows at the rate set for streaming. The stream rate for the main SWF file is reduced based on the reduction of bandwidth caused by the additional data requests. It’s helpful to test your document at each speed you intend to support, and on each computer you intend to support. This helps you ensure that the document doesn’t overburden the slowest connection and computer it is designed for. [¶]</p> <p>You can also generate a report of frames that are slowing playback, and then optimize or eliminate some of the content in those frames. See “Optimizing Flash documents” on page 36. [¶]</p> <p>To change the settings for the SWF file created using the Test Movie and Test Scene commands, use File > Publish Settings. See “Publishing Flash documents” on page 281. [¶]</p>

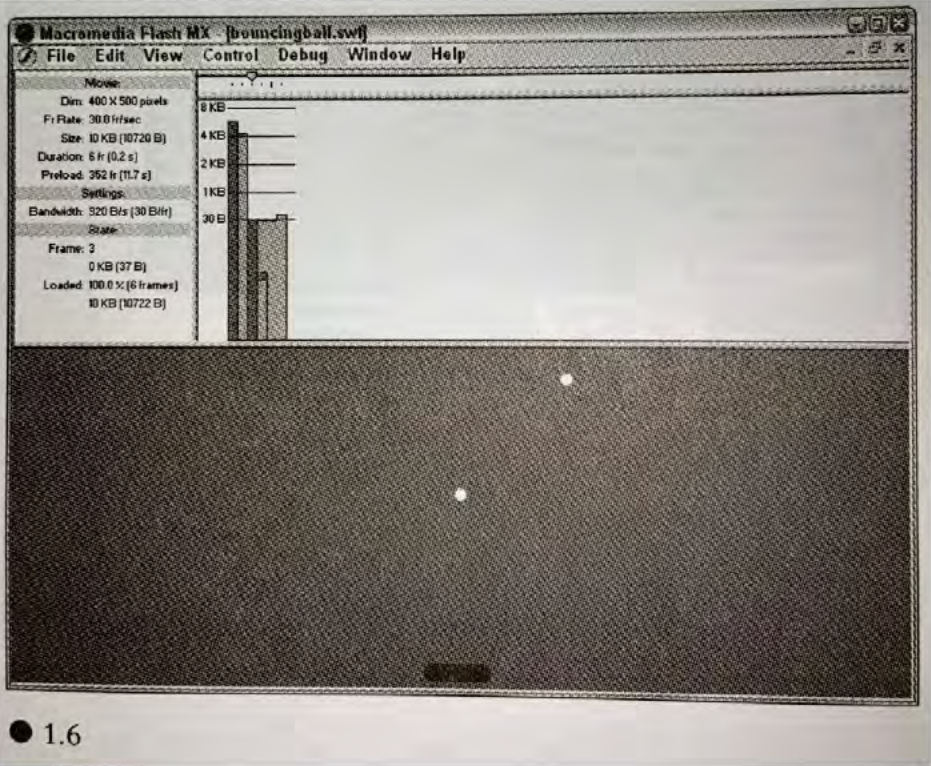
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'579 Claim 19	Reference/Combination
	<p>To test download performance: [¶] Do one of the following: [¶] Select Control > Test Scene or Control > Test Movie. [¶] If you test a scene or document, Flash publishes the current selection as a SWF file using the settings in the Publish Settings dialog box. (See “Publishing Flash documents” on page 281.) The SWF file opens in a new window and begins playing immediately. [¶] Select File > Open, and select a SWF file. [¶]</p> <p>Select View > Download Settings, and select a download speed to determine the streaming rate that Flash simulates: 14.4 Kbps, 28.8 Kbps, 56 Kbps, DSL, T1 or a User Setting. To enter your own User Setting, select Customize. [¶]</p> <p>When viewing the SWF file, select View > Bandwidth Profiler to display a graph of the downloading performance. [¶] The left side of the profiler displays information about the document, its settings, its state, and streams, if any are included in the document. [¶] The right section of the profiler shows the Timeline header and graph. In the graph, each bar represents an individual frame of the document. The size of the bar corresponds to that frame’s size in bytes. The red line beneath the Timeline header indicates whether a given frame streams in real time with the current modem speed set in the Control menu. If a bar extends above the red line, the document must wait for that frame to load. [¶]</p> <p>Select View > Simulate Download to turn streaming off or on. [¶] If you turn streaming off, the document starts over without simulating a web connection. [¶]</p> <p>Click a bar on the graph to display settings for the corresponding frame in the left window and stop the document. [¶]</p> <p>If necessary, adjust the view of the graph: [¶] Select View > Streaming Graph to show which frames cause pauses. This default view displays alternating light and dark gray blocks representing each frame. The side of each block indicates its relative byte size. The first frame stores a symbol’s contents, so it is often larger than other frames. [¶] Select View > Frame by Frame Graph to display the size of each frame. This view helps you see which frames contribute to streaming delays. If any frame block extends above the red line in the graph, the Flash Player halts playback until the entire frame downloads. [¶]</p> <p>Close the test window to return to the normal authoring environment. [¶] Once you’ve set up a test environment incorporating the Bandwidth Profiler, you can open any SWF file directly in test mode. The file</p>

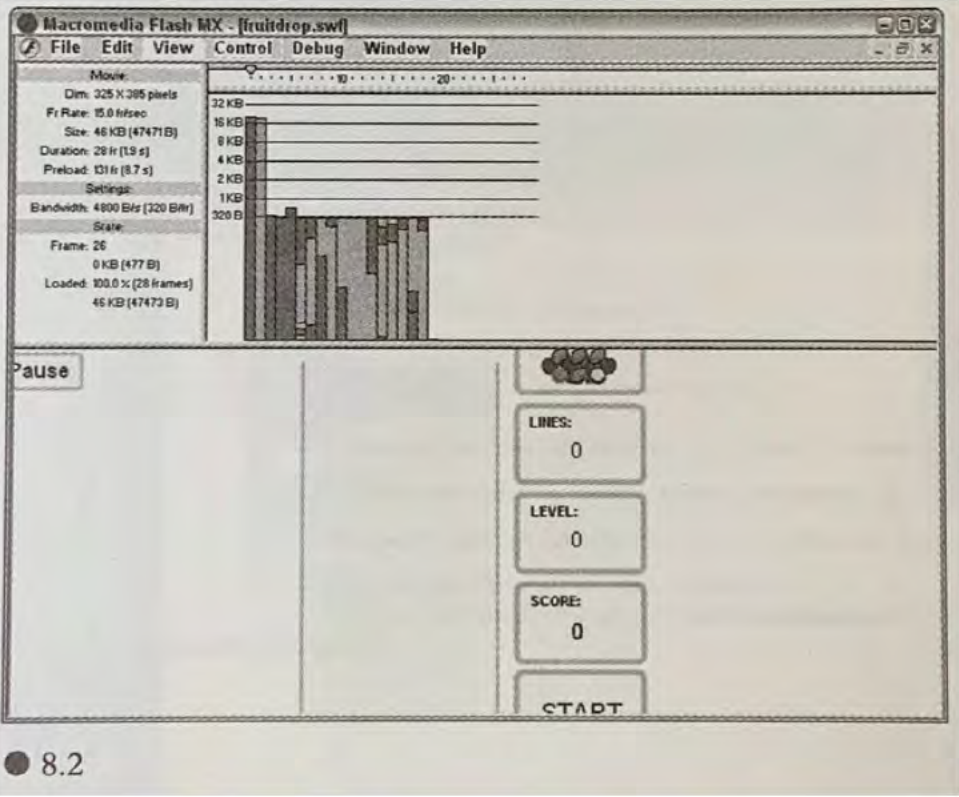
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'579 Claim 19	Reference/Combination
	<p>opens in a Flash Player window, using the Bandwidth Profiler and other selected viewing options. [¶] For more information on debugging your documents, see “Writing and Debugging Scripts” in ActionScript Reference Guide Help. [¶]</p> <p>To generate a report listing the amount of data in the final Flash Player file: [¶] Select File > Publish Settings and click the Flash tab. [¶] Select Generate Size Report. [¶] Click Publish. [¶]</p> <p>Flash generates a text file with the extension .txt. (If the document file is myMovie.fla, the text file is myMovie Report.txt.) The report lists the size of each frame, shape, text, sound, video and ActionScript script by frame.</p> <p>[Flash MX 2004 Using Flash, p. 390]</p> <p>In addition, Flash files are compact, making them perfect for wireless carrier networks, where transfer rates range between 9.6 and 60 kilobytes per second (Kbps). Mobile devices, unlike desktop computers, have limited storage capability, so the small footprint of Flash is ideal.</p> <p>David discloses, via screenshots, the appearance of the Bandwidth Profiler.</p> <p>[David, p. 7]</p>

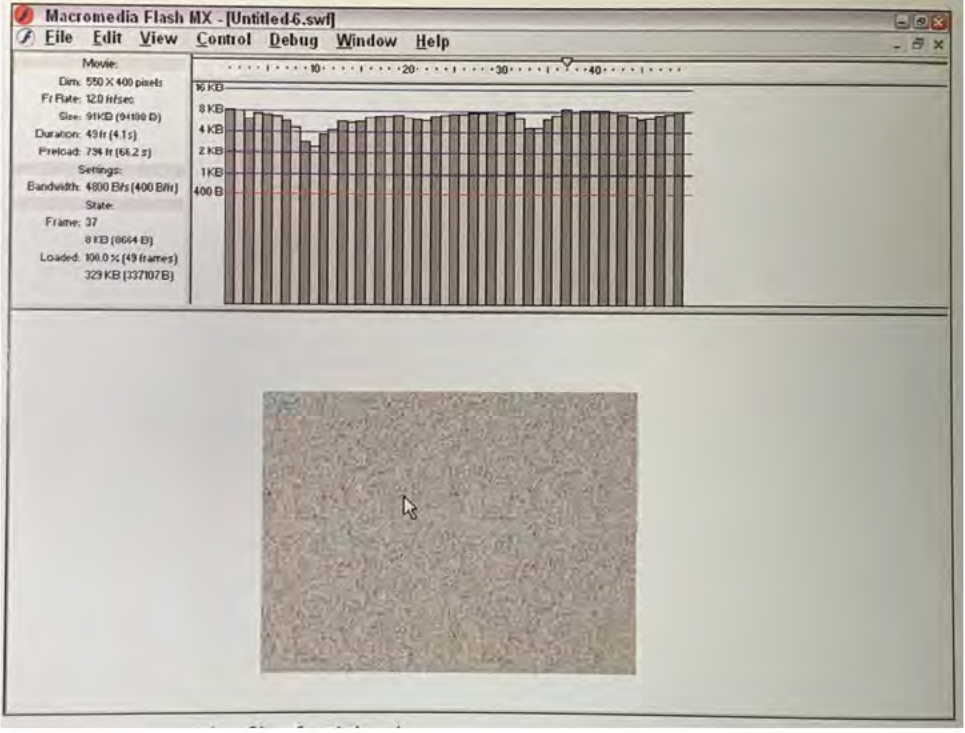
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*579 Claim 19	Reference/Combination
	<div><p>● 1.6</p><p>[David, p. 98]</p></div>

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'579 Claim 19	Reference/Combination
	 <p data-bbox="386 1423 1133 1449">[David, #18 of 32 unnumbered pages between pages numbered 192 and 193]</p>

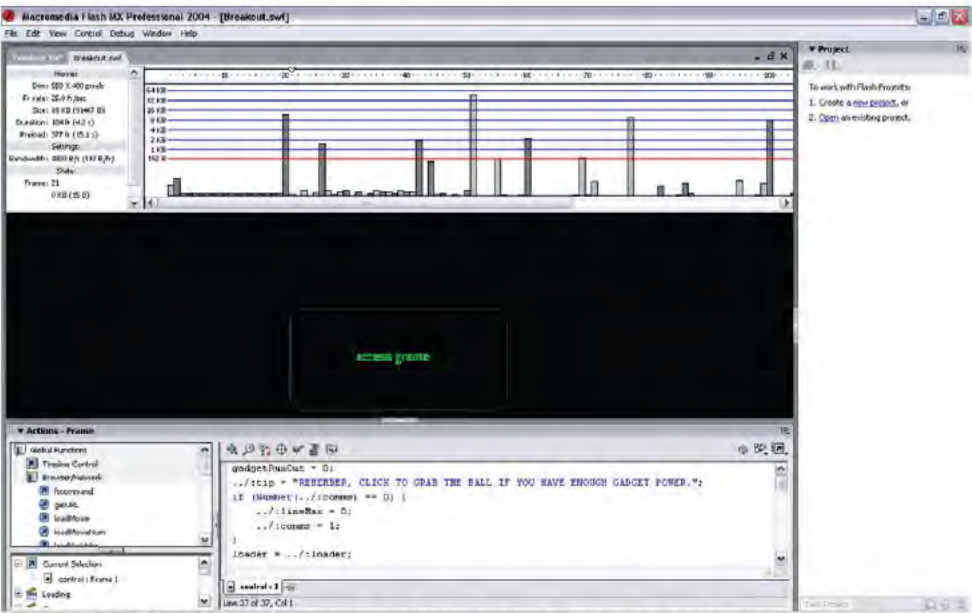
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*579 Claim 19	Reference/Combination
	 <p>The screenshot shows the Macromedia Flash MX Professional 2004 interface. The title bar reads 'Macromedia Flash MX - [Untitled6.swf]'. The menu bar includes 'File', 'Edit', 'View', 'Control', 'Debug', 'Window', and 'Help'. On the left, a 'Movie' panel displays properties: Dimensions: 550 X 400 pixels, Frame Rate: 12.0 fps, Size: 911KB (94100 B), Duration: 4.1s, Preload: 73% (68.2 s), Settings: Bandwidth: 4800 B/s (400 B/it), State: Frame: 37, 0 KB (8664 B), Loaded: 100.0% (49 frames), 329 KB (337107 B). The main workspace features a timeline at the top with a playhead at 4.0 seconds and a video player below it showing a grainy, textured image with a mouse cursor.</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

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*579 Claim 20	Reference/Combination
20[a] The medium of claim 19, wherein scripts can be created to simulate events that occur on the mobile device to determine the performance of the application, or the network, or both.	<p>The Flash MX Professional 2004 system discloses this limitation.</p>  <p>Screenshot of Flash MX Professional 2004 Bandwidth Profiler interface with “Actions – Frame” window enabling creating ActionScript scripts within the Flash application.</p> <p>For example, the manual discloses that Flash MX Professional 2004 supports creating ActionScript (scripts).</p> <p>[Flash MX 2004 Using Flash, p. 23]</p>

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	<p>Working with scenes [¶] To organize a document thematically, you can use scenes. For example, you might use separate scenes for an introduction, a loading message, and credits. [¶] Note: You cannot use scenes in a screen-based document. For information on screens, see Chapter 12, “Working with Screens (Flash Professional Only),” on page 197. [¶]</p> <p>When you publish a Flash document that contains more than one scene, the scenes in the document play back in the order they are listed in the Scene panel in the Flash document. Frames in the document are numbered consecutively through scenes. For example, if a document contains two scenes with ten frames each, the frames in Scene 2 are numbered 11–20. [¶]</p> <p>You can add, delete, duplicate, rename, and change the order of scenes. [¶]</p> <p>To stop or pause a document after each scene, or to let users navigate the document in a nonlinear fashion, you use actions. See “ActionScript Basics” in ActionScript Reference Guide Help. [¶]</p> <p>To display the Scene panel:</p> <ul style="list-style-type: none"> • Select Window > Design Panels > Scene. [¶] <p>To view a particular scene:</p> <ul style="list-style-type: none"> • Select View > Go To and then select the name of the scene from the submenu. [¶] <p>To add a scene, do one of the following:</p> <ul style="list-style-type: none"> • Click the Add Scene button in the Scene panel. • Select Insert > Scene. <p>ActionScript adds complex interactivity, playback control, and data display, and can store and retrieve information, and thereby can simulate events that occur on the mobile device. ActionScript also has networking capabilities, such as by calling loadMovie and getUrl, so it can also determine the performance of the network.</p>

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	<p>[<i>Flash MX 2004 Using Flash</i>, p. 18] ActionScript is the Flash scripting language that enables you to add complex interactivity, playback control, and data display to a Flash document. You can add ActionScript within the Flash authoring environment using the Actions panel, or create external ActionScript files using an external editor. [¶]</p> <p>You don't need to understand every ActionScript element to begin scripting; if you have a clear goal, you can start building scripts with simple actions. You can incorporate new elements of the language as you learn them to accomplish more complicated tasks. [¶]</p> <p>Like other scripting languages, ActionScript follows its own rules of syntax, reserves keywords, provides operators, and allows you to use variables to store and retrieve information. ActionScript includes built-in objects and functions and allows you to create your own objects and functions. For more information on ActionScript, see "ActionScript Basics" in ActionScript Reference Guide Help.</p> <p>[<i>Flash MX 2004 Using Flash</i>, p. 38] When external SWF files, GIF and XML files, and variables are streamed into a player by using ActionScript calls such as loadMovie and getUrl, the data flows at the rate set for streaming. The stream rate for the main SWF file is reduced based on the reduction of bandwidth caused by the additional data requests.</p> <p>As another example, the Bandwidth Profiler can run a scripted simulation of a download, thereby creating a script to simulate a download event that occurs on the mobile device to determine the performance of the application and network.</p> <p>[<i>Flash MX 2004 Using Flash</i>, pp. 38–39] The Flash Player attempts to meet the frame rate you set; the actual frame rate during playback can vary on different computers. If a document that is downloading reaches a particular frame before the frame's required data has downloaded, the document pauses until the data arrives. [¶]</p> <p>To view downloading performance graphically, you can use the Bandwidth Profiler, which shows how much data is sent for each frame according to the modem speed you specify. The Bandwidth Profiler is divided into</p>

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	<p>two panes. The left pane shows information about the document, the download settings, the state, and streams, if any are included. The right pane shows information about individual frames in the document. [¶]</p> <p>In simulating the downloading speed, Flash uses estimates of typical Internet performance, not the exact modem speed. For example, if you choose to simulate a modem speed of 28.8 Kbps, Flash sets the actual rate to 2.3 Kbps to reflect typical Internet performance. The profiler also compensates for the added compression support for SWF files, which reduces the file size and improves streaming performance. [¶]</p> <p>When external SWF files, GIF and XML files, and variables are streamed into a player by using ActionScript calls such as loadMovie and getUrl, the data flows at the rate set for streaming. The stream rate for the main SWF file is reduced based on the reduction of bandwidth caused by the additional data requests. It's helpful to test your document at each speed you intend to support, and on each computer you intend to support. This helps you ensure that the document doesn't overburden the slowest connection and computer it is designed for. [¶]</p> <p>You can also generate a report of frames that are slowing playback, and then optimize or eliminate some of the content in those frames. See "Optimizing Flash documents" on page 36. [¶]</p> <p>To change the settings for the SWF file created using the Test Movie and Test Scene commands, use File > Publish Settings. See "Publishing Flash documents" on page 281. [¶]</p> <p>To test download performance: [¶] Do one of the following: [¶] Select Control > Test Scene or Control > Test Movie. [¶] If you test a scene or document, Flash publishes the current selection as a SWF file using the settings in the Publish Settings dialog box. (See "Publishing Flash documents" on page 281.) The SWF file opens in a new window and begins playing immediately. [¶] Select File > Open, and select a SWF file. [¶]</p> <p>Select View > Download Settings, and select a download speed to determine the streaming rate that Flash simulates: 14.4 Kbps, 28.8 Kbps, 56 Kbps, DSL, T1 or a User Setting. To enter your own User Setting, select Customize. [¶]</p> <p>When viewing the SWF file, select View > Bandwidth Profiler to display a graph of the downloading performance. [¶] The left side of the profiler displays information about the document, its settings, its state,</p>

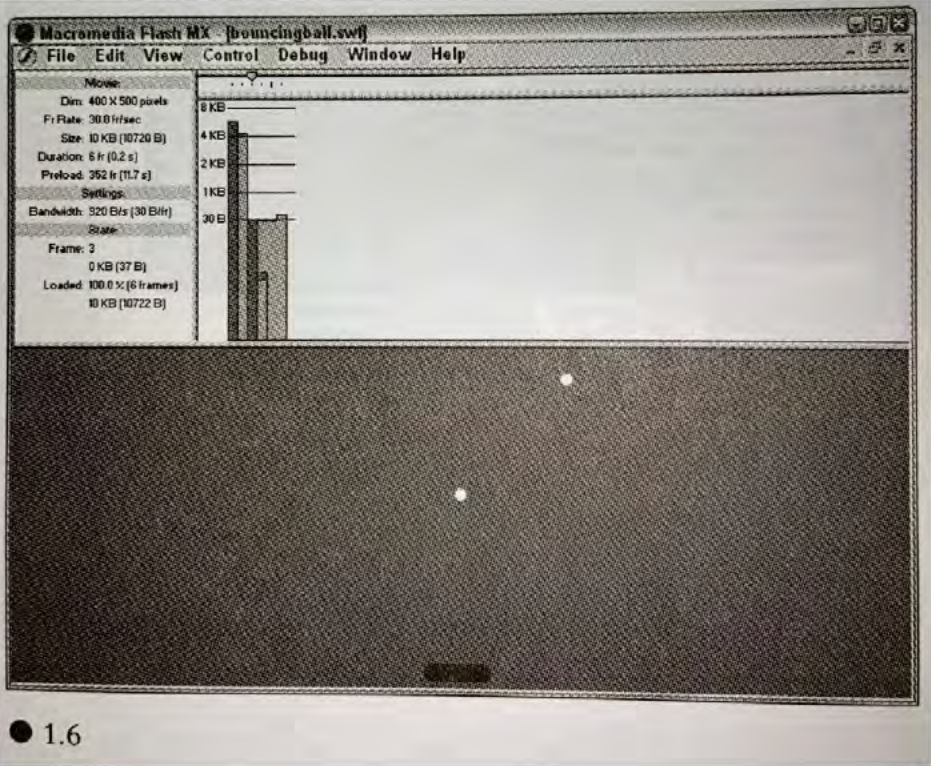
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	<p>and streams, if any are included in the document. ¶ The right section of the profiler shows the Timeline header and graph. In the graph, each bar represents an individual frame of the document. The size of the bar corresponds to that frame's size in bytes. The red line beneath the Timeline header indicates whether a given frame streams in real time with the current modem speed set in the Control menu. If a bar extends above the red line, the document must wait for that frame to load. ¶</p> <p>Select View > Simulate Download to turn streaming off or on. ¶ If you turn streaming off, the document starts over without simulating a web connection. ¶</p> <p>Click a bar on the graph to display settings for the corresponding frame in the left window and stop the document. ¶</p> <p>If necessary, adjust the view of the graph: ¶ Select View > Streaming Graph to show which frames cause pauses. This default view displays alternating light and dark gray blocks representing each frame. The side of each block indicates its relative byte size. The first frame stores a symbol's contents, so it is often larger than other frames. ¶ Select View > Frame by Frame Graph to display the size of each frame. This view helps you see which frames contribute to streaming delays. If any frame block extends above the red line in the graph, the Flash Player halts playback until the entire frame downloads. ¶</p> <p>Close the test window to return to the normal authoring environment. ¶ Once you've set up a test environment incorporating the Bandwidth Profiler, you can open any SWF file directly in test mode. The file opens in a Flash Player window, using the Bandwidth Profiler and other selected viewing options. ¶ For more information on debugging your documents, see "Writing and Debugging Scripts" in ActionScript Reference Guide Help. ¶</p> <p>To generate a report listing the amount of data in the final Flash Player file: ¶ Select File > Publish Settings and click the Flash tab. ¶ Select Generate Size Report. ¶ Click Publish. ¶</p> <p>Flash generates a text file with the extension .txt. (If the document file is myMovie.fla, the text file is myMovie.Report.txt.) The report lists the size of each frame, shape, text, sound, video and ActionScript script by frame.</p>

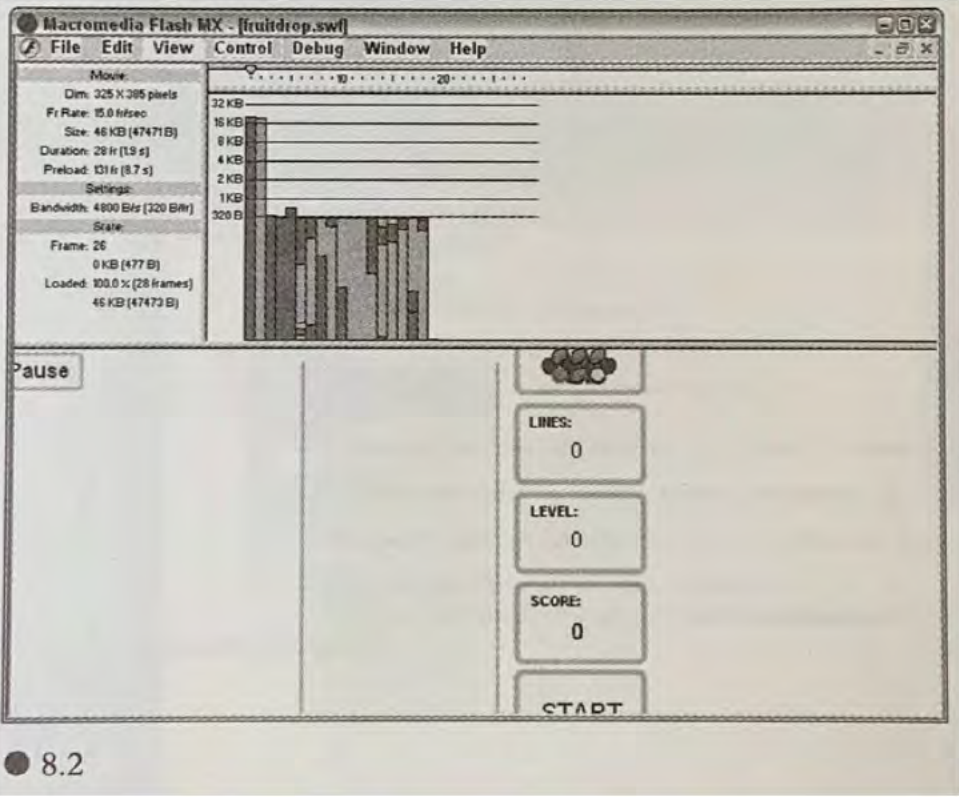
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	<p data-bbox="378 604 751 632">[Flash MX 2004 Using Flash, p. 390]</p> <p data-bbox="378 632 1442 716">In addition, Flash files are compact, making them perfect for wireless carrier networks, where transfer rates range between 9.6 and 60 kilobytes per second (Kbps). Mobile devices, unlike desktop computers, have limited storage capability, so the small footprint of Flash is ideal.</p> <p data-bbox="378 800 1122 827">David discloses, via screenshots, the appearance of the Bandwidth Profiler.</p> <p data-bbox="378 856 505 884">[David, p. 7]</p>

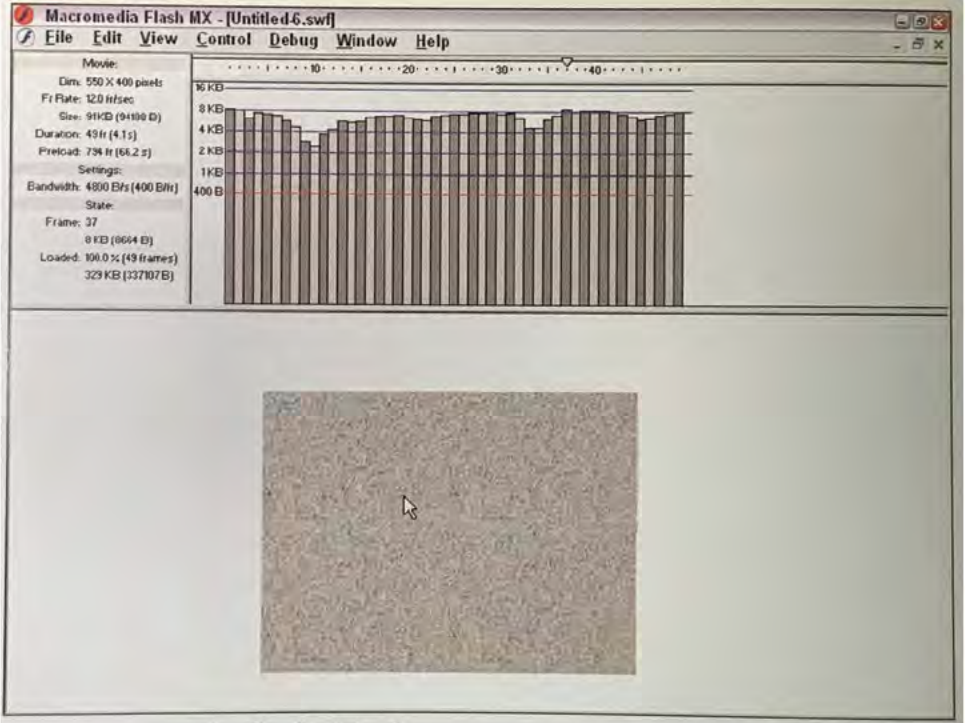
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*579 Claim 20	Reference/Combination
	<div><p>● 1.6</p><p>[David, p. 98]</p></div>

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'579 Claim 20	Reference/Combination
	 <p data-bbox="386 1423 1136 1451">[David, #18 of 32 unnumbered pages between pages numbered 192 and 193]</p>

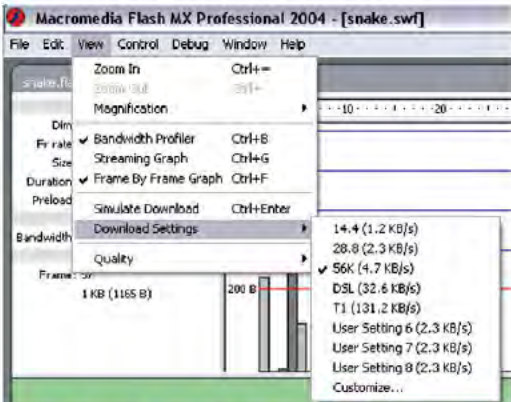
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*579 Claim 20	Reference/Combination
	 <p>The screenshot shows the Macromedia Flash MX Professional 2004 interface. The title bar reads 'Macromedia Flash MX - [Untitled6.swf]'. The menu bar includes 'File', 'Edit', 'View', 'Control', 'Debug', 'Window', and 'Help'. The interface is divided into several panels. On the left, the 'Movie' panel displays properties for the timeline: 'Dim: 550 X 400 pixels', 'Fr Rate: 120 fps/sec', 'Size: 911KB (94100 B)', 'Duration: 49 fr (4.1 s)', 'Preload: 734 fr (68.2 s)', 'Settings: Bandwidth: 4800 B/s (400 B/fr)', 'State: Frame: 37', '0 KB (8664 B)', and 'Loaded: 100.0 % (49 frames)', '329 KB (327107 B)'. The main timeline area shows a series of vertical bars representing frames, with a playhead at frame 37. Below the timeline is a large video player window displaying a grainy, low-resolution video frame with a mouse cursor pointing at it.</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

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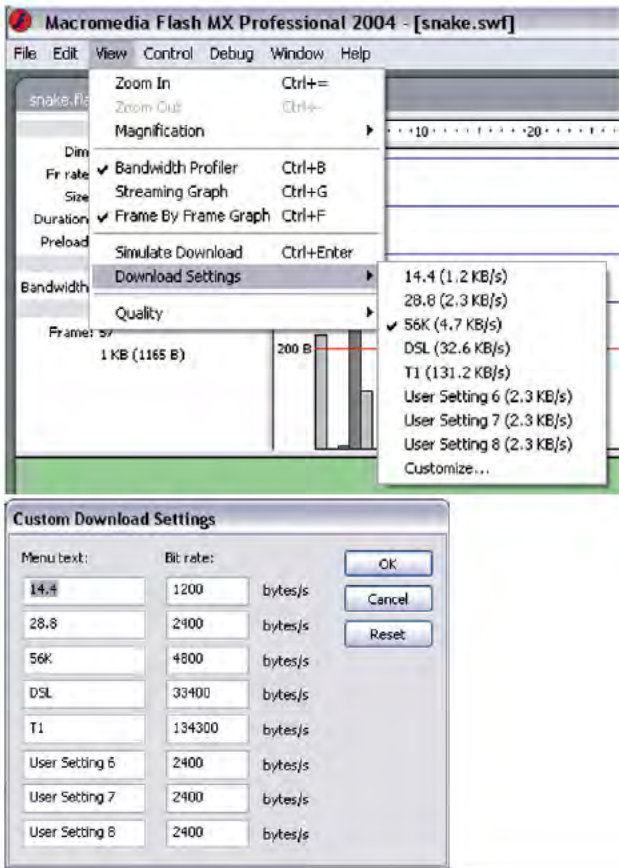
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*579 Claim 25	Reference/Combination
25[a] The medium of claim 18, wherein the network characteristics are displayed using at least one of a map, drop-down list, and drop-down menu.	<p>The Flash MX Professional 2004 system discloses this limitation.</p>  <p>Screenshot showing the Flash MX Professional 2004 Bandwidth Profiler displays network characteristics in a drop-down list and/or menu.</p> <p>For example, Flash MX Professional 2004 expressly and/or inherently displays download speeds in a map, drop-down list, and/or drop-down menu.</p> <p>[Flash MX 2004 Using Flash, p. 38] Select View > Download Settings, and select a download speed to determine the streaming rate that Flash simulates: 14.4 Kbps, 28.8 Kbps, 56 Kbps, DSL, T1 or a User Setting.</p> <p>To the extent this limitation is not expressly or inherently disclosed, it would have been obvious to a POSITA in light of the disclosure of choice above or in light of the POSITA's general knowledge of how software generally presents a list or menu of options.</p>

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*579 Claim 25	Reference/Combination
	<p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

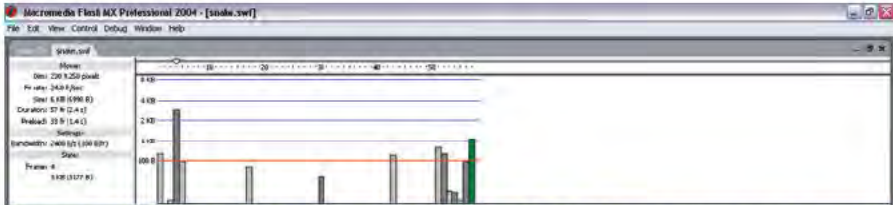
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*579 Claim 26	Reference/Combination																											
26[a] The medium of claim 18, wherein the network characteristics can be managed or custom network characteristics can be created.	<p>The Flash MX Professional 2004 system discloses this limitation.</p>  <p>The screenshot shows the Macromedia Flash MX Professional 2004 interface. The 'Download Settings' menu is open, displaying a list of settings including 14.4 (1.2 KB/s), 28.8 (2.3 KB/s), 56K (4.7 KB/s), DSL (32.6 KB/s), T1 (131.2 KB/s), User Setting 6 (2.3 KB/s), User Setting 7 (2.3 KB/s), User Setting 8 (2.3 KB/s), and Customize... The 'Custom Download Settings' dialog box is also visible, showing a table of settings:</p> <table><thead><tr><th>Menu text:</th><th>Bit rate:</th><th>bytes/s</th></tr></thead><tbody><tr><td>14.4</td><td>1200</td><td>bytes/s</td></tr><tr><td>28.8</td><td>2400</td><td>bytes/s</td></tr><tr><td>56K</td><td>4800</td><td>bytes/s</td></tr><tr><td>DSL</td><td>33400</td><td>bytes/s</td></tr><tr><td>T1</td><td>134300</td><td>bytes/s</td></tr><tr><td>User Setting 6</td><td>2400</td><td>bytes/s</td></tr><tr><td>User Setting 7</td><td>2400</td><td>bytes/s</td></tr><tr><td>User Setting 8</td><td>2400</td><td>bytes/s</td></tr></tbody></table>	Menu text:	Bit rate:	bytes/s	14.4	1200	bytes/s	28.8	2400	bytes/s	56K	4800	bytes/s	DSL	33400	bytes/s	T1	134300	bytes/s	User Setting 6	2400	bytes/s	User Setting 7	2400	bytes/s	User Setting 8	2400	bytes/s
Menu text:	Bit rate:	bytes/s																										
14.4	1200	bytes/s																										
28.8	2400	bytes/s																										
56K	4800	bytes/s																										
DSL	33400	bytes/s																										
T1	134300	bytes/s																										
User Setting 6	2400	bytes/s																										
User Setting 7	2400	bytes/s																										
User Setting 8	2400	bytes/s																										

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'579 Claim 26	Reference/Combination
	<p>The Flash MX Professional 2004 Bandwidth Profiler User Settings under Download Settings are configured to enable a user to manage and create custom network characteristics.</p> <p>For example, Flash MX Professional 2004 allows the user to manage and/or customize the download speed.</p> <p>[Flash MX 2004 Using Flash, p. 38] Select View > Download Settings, and select a download speed to determine the streaming rate that Flash simulates: 14.4 Kbps, 28.8 Kbps, 56 Kbps, DSL, T1 or a User Setting. To enter your your own User Setting, select Customize.</p> <p>[Flash MX 2004 Using Flash, p. 385] Bandwidth Selection template uses forms and components to present the selection interface. This interface lets users control how much content they receive and lets authors tailor their applications to a variety of connection speeds. After the user makes a speed selection, the media playback component is directed to play the specified video. ¶ The Select screen contains radio buttons that allow bandwidth selection. ActionScript to handle the selection of radio buttons is included within the Timeline of this screen. ¶ To change the option labels or the number of options that users is presented, you can add, remove, or edit the components on the Select form.</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

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*579 Claim 27	Reference/Combination
27[a] The medium of claim 18, wherein the instructions display simultaneously two or more representations of the monitored resource.	<p>The Flash MX Professional 2004 system discloses this limitation.</p>  <p>Screenshot of Flash MX Professional 2004 Bandwidth Profiler showing a simultaneous representation of network usage: frame 4 used 3 KB, represented both in text on the left and in a bar in the bar chart on the right.</p> <p>For example, the Bandwidth Profiler in Flash MX Professional 2004 displays simultaneously two or more representations of bandwidth. For example, each bar in the bar graph represents bandwidth usage, and clicking a bar in the bar graph on the right displays information about the bar on the left, such as the bandwidth used.</p> <p>[Flash MX 2004 Using Flash, pp. 38–39]</p> <p>The Flash Player attempts to meet the frame rate you set; the actual frame rate during playback can vary on different computers. If a document that is downloading reaches a particular frame before the frame's required data has downloaded, the document pauses until the data arrives. [¶]</p> <p>To view downloading performance graphically, you can use the Bandwidth Profiler, which shows how much data is sent for each frame according to the modem speed you specify. The Bandwidth Profiler is divided into two panes. The left pane shows information about the document, the download settings, the state, and streams, if any are included. The right pane shows information about individual frames in the document. [¶]</p> <p>In simulating the downloading speed, Flash uses estimates of typical Internet performance, not the exact modem speed. For example, if you choose to simulate a modem speed of 28.8 Kbps, Flash sets the actual rate</p>

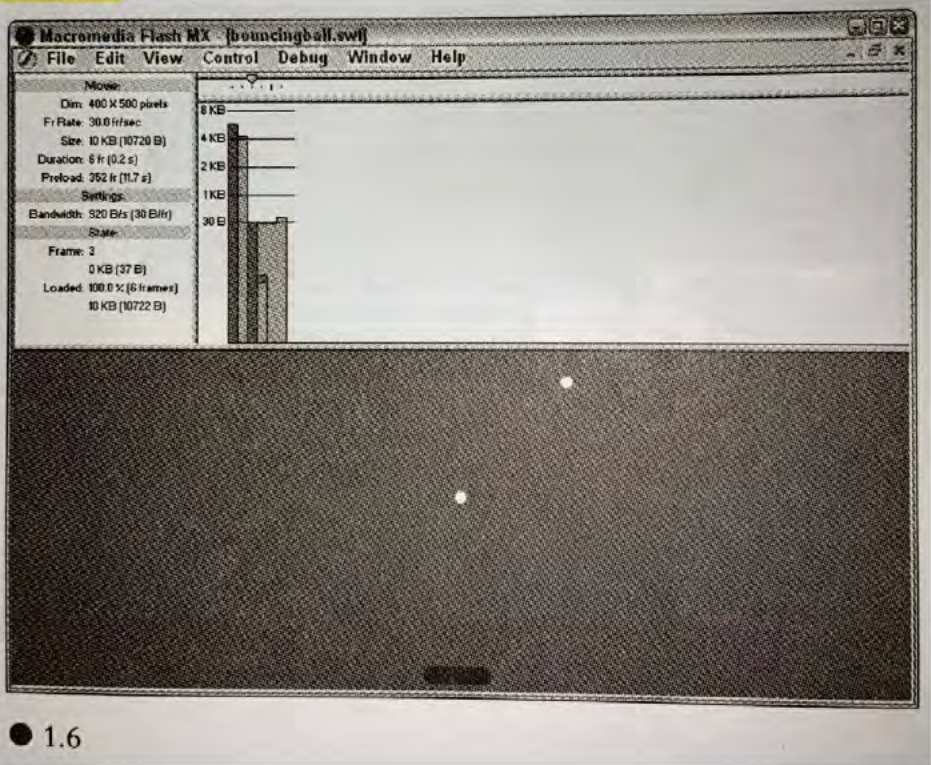
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'579 Claim 27	Reference/Combination
	<p>to 2.3 Kbps to reflect typical Internet performance. The profiler also compensates for the added compression support for SWF files, which reduces the file size and improves streaming performance. [¶]</p> <p>When external SWF files, GIF and XML files, and variables are streamed into a player by using ActionScript calls such as loadMovie and getUrl, the data flows at the rate set for streaming. The stream rate for the main SWF file is reduced based on the reduction of bandwidth caused by the additional data requests. It's helpful to test your document at each speed you intend to support, and on each computer you intend to support. This helps you ensure that the document doesn't overburden the slowest connection and computer it is designed for. [¶]</p> <p>You can also generate a report of frames that are slowing playback, and then optimize or eliminate some of the content in those frames. See "Optimizing Flash documents" on page 36. [¶]</p> <p>To change the settings for the SWF file created using the Test Movie and Test Scene commands, use File > Publish Settings. See "Publishing Flash documents" on page 281. [¶]</p> <p>To test download performance: [¶] Do one of the following: [¶] Select Control > Test Scene or Control > Test Movie. [¶] If you test a scene or document, Flash publishes the current selection as a SWF file using the settings in the Publish Settings dialog box. (See "Publishing Flash documents" on page 281.) The SWF file opens in a new window and begins playing immediately. [¶] Select File > Open, and select a SWF file. [¶]</p> <p>Select View > Download Settings, and select a download speed to determine the streaming rate that Flash simulates: 14.4 Kbps, 28.8 Kbps, 56 Kbps, DSL, T1 or a User Setting. To enter your own User Setting, select Customize. [¶]</p> <p>When viewing the SWF file, select View > Bandwidth Profiler to display a graph of the downloading performance. [¶] The left side of the profiler displays information about the document, its settings, its state, and streams, if any are included in the document. [¶] The right section of the profiler shows the Timeline header and graph. In the graph, each bar represents an individual frame of the document. The size of the bar corresponds to that frame's size in bytes. The red line beneath the Timeline header indicates whether a given frame streams in real time with the current modem speed set in the Control menu. If a bar extends above the red line, the document must wait for that frame to load. [¶]</p>

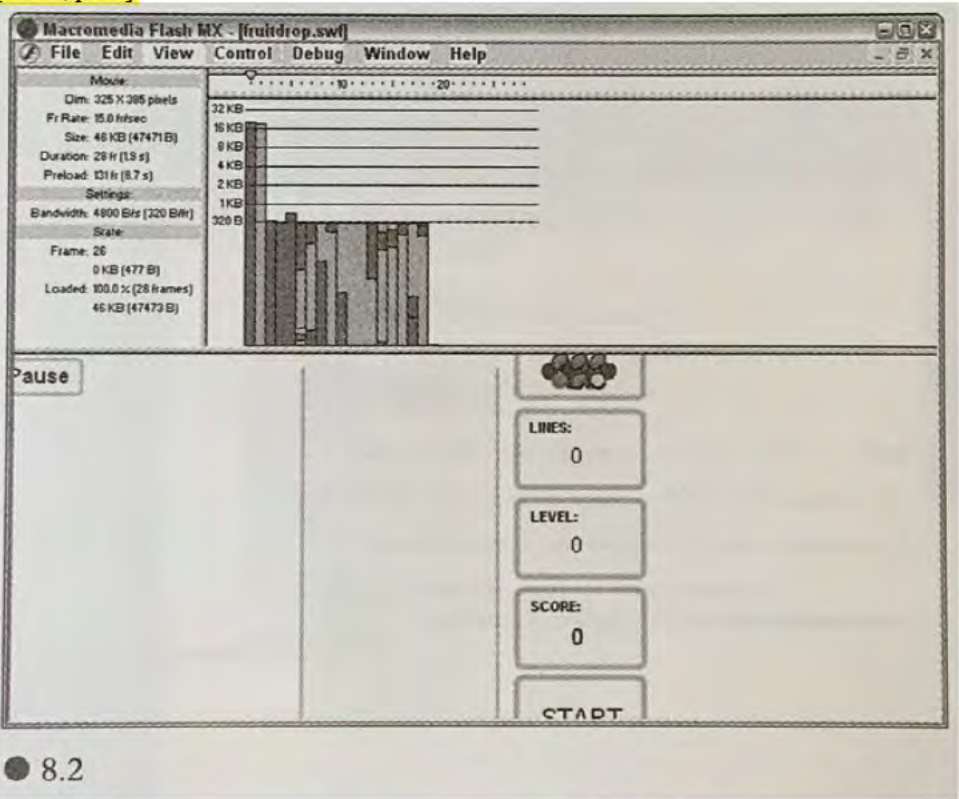
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	<p>Select View > Simulate Download to turn streaming off or on. [¶] If you turn streaming off, the document starts over without simulating a web connection. [¶]</p> <p>Click a bar on the graph to display settings for the corresponding frame in the left window and stop the document. [¶]</p> <p>If necessary, adjust the view of the graph: [¶] Select View > Streaming Graph to show which frames cause pauses. This default view displays alternating light and dark gray blocks representing each frame. The side of each block indicates its relative byte size. The first frame stores a symbol's contents, so it is often larger than other frames. [¶] Select View > Frame by Frame Graph to display the size of each frame. This view helps you see which frames contribute to streaming delays. If any frame block extends above the red line in the graph, the Flash Player halts playback until the entire frame downloads. [¶]</p> <p>Close the test window to return to the normal authoring environment. [¶] Once you've set up a test environment incorporating the Bandwidth Profiler, you can open any SWF file directly in test mode. The file opens in a Flash Player window, using the Bandwidth Profiler and other selected viewing options. [¶] For more information on debugging your documents, see "Writing and Debugging Scripts" in ActionScript Reference Guide Help. [¶]</p> <p>To generate a report listing the amount of data in the final Flash Player file: [¶] Select File > Publish Settings and click the Flash tab. [¶] Select Generate Size Report. [¶] Click Publish. [¶]</p> <p>Flash generates a text file with the extension .txt. (If the document file is myMovie fla, the text file is myMovie Report.txt.) The report lists the size of each frame, shape, text, sound, video and ActionScript script by frame.</p> <p>[Flash MX 2004 Using Flash, p. 390]</p> <p>In addition, Flash files are compact, making them perfect for wireless carrier networks, where transfer rates range between 9.6 and 60 kilobytes per second (Kbps). Mobile devices, unlike desktop computers, have limited storage capability, so the small footprint of Flash is ideal.</p>

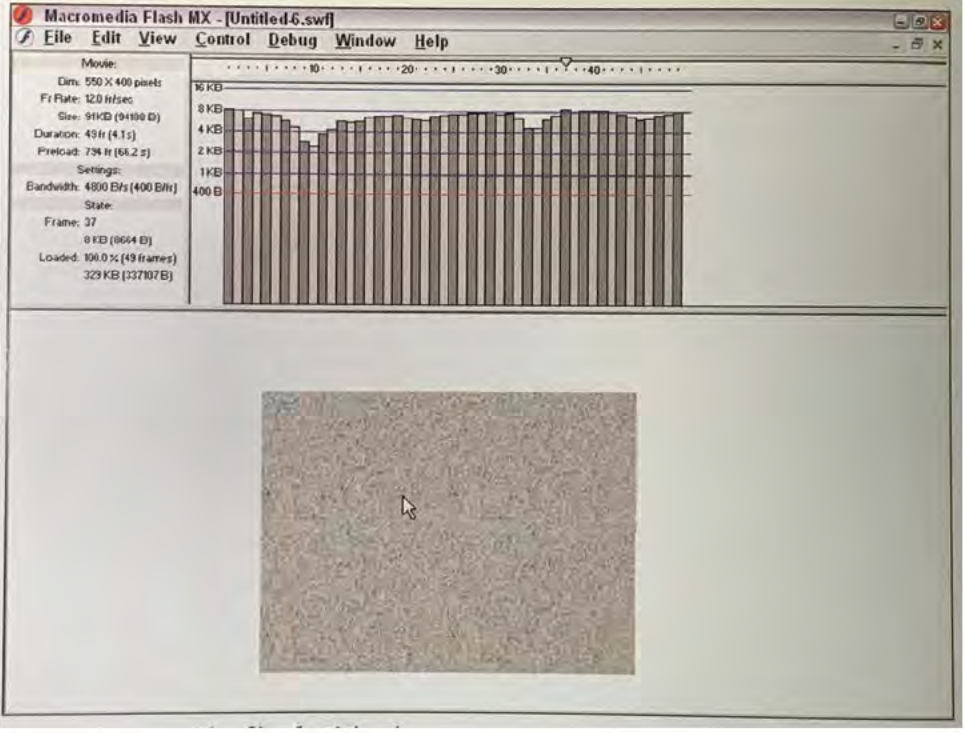
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	<p>David discloses, via screenshots, the appearance of the Bandwidth Profiler.</p> <p>[David, p. 7]</p> 

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	<p>[David, p. 98]</p>  <p>● 8.2</p> <p>[David, #18 of 32 unnumbered pages between pages numbered 192 and 193]</p>

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	 <p>The screenshot shows the Macromedia Flash MX Professional 2004 interface. The top menu bar includes File, Edit, View, Control, Debug, Window, and Help. Below the menu is a timeline with a playhead at 40 seconds. The left panel displays movie properties: Dimensions: 550 X 400 pixels, Frame Rate: 12.0 fps, Size: 91 KB (94100 B), Duration: 49 fr (4.1 s), Preload: 794 fr (66.2 s), Settings: Bandwidth: 4800 B/s (400 B/fr), State: Frame: 37, 0 KB (0664 B), Loaded: 100.0 % (49 frames), 329 KB (327707 B). The main canvas shows a video player with a textured, grainy video frame and a mouse cursor pointing at it.</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

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28[a] The medium of claim 27, wherein the instructions to display the representations are stored in at least one of a file, a database, and on computer-readable media that is accessible via the internet.	<p>The Flash MX Professional 2004 system discloses this limitation.</p> <p>For example, Flash MX Professional 2004 is software comprising files because it is installed on the user's computer.</p> <p>[Flash MX 2004 Using Flash, p. 178] You can install the FLV Export plug-in after installation of Flash MX Professional 2004 is complete.</p> <p>[Flash MX 2004 Getting Started with Flash, p. 16] Installing and activating Flash [¶] Installing Flash is an automated process. After installation, you can choose to run the 30-day trial mode of Flash, or you can choose to activate either Flash MX 2004 or Flash MX 2004 Professional. Both editions of Flash must be activated over the Internet or phone prior to use, and you need your serial number to activate either edition of Flash unless you want to select trial mode. Windows 98 SE users must have Microsoft Internet Explorer 5.1 or later in order to activate over the Internet. [¶] Note: Installing Macromedia Flash MX 2004 and Macromedia Flash MX Professional 2004 does not overwrite earlier Flash versions, such as Macromedia Flash MX, that you might have installed. [¶]</p> <p>To install Flash: [¶] 1. Close any running versions of Flash before installing. [¶] 2. Do one of the following to start the installation process: ■ (Windows) If you have a CD, insert it in your CD drive. A Flash movie clip plays that guides you through installation choices. Note: You can also run Install Flash MX 2004.exe to start the Flash movie clip, if necessary. ■ (Macintosh) If you have a CD, insert it in your CD drive and double-click the Installer icon. ■ If you have downloaded Flash from the Internet, double-click FlashMX2004Installer.exe (Windows), or double-click the Installer icon (Macintosh) and follow the onscreen instructions. [¶] 3. When installation is complete, follow the instructions to select the 30-day trial period, or enter your serial number and activate Flash.</p> <p>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, pp. 7–8] To create content for mobile phones, you must have the following items on your computer: [¶] • The latest version of Macromedia Flash MX Professional 2004 (7.0.1) [¶] • The new FlashLite1_1.dll (FlashLite1_1.dmg on the Mac) file for testing Flash applications in the Flash Lite 1.1 authoring environment [¶] • The new FlashLite1_1.xml file for publishing Flash Lite 1.1 SWF files [¶] • The DevicesMsg.cfg configuration file for customizing the features that are supported in Flash Lite 1.1. [¶]</p>

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	<p>Installing the Flash MX Professional 2004 7.0.1 update [¶] To export Flash Lite 1.1 contents for mobile phones correctly, you need to have the latest version of Macromedia Flash MX Professional 2004 (7.0.1). You can download the updater program from the Macromedia website: www.macromedia.com/support/flash/downloads.html. [¶]</p> <p>Installing the FlashLite1_1.dll (FlashLite1_1.dmg on the Mac) file [¶] The FlashLite1_1.dll (FlashLite1_1 on the Mac) file is part of the Flash Lite 1.1 Authoring Updater. This DLL is to be used to test content when you select Test Movie to validate your content. This new DLL is used when Flash Lite 1.1 is selected as the Flash version to publish to (using the publish setting interface). [...]</p> <p>The Flash Lite 1.1 Test Movie command allows users to customize the features that are supported in Flash Player. From the Flash Lite 1.1 Authoring Updater, copy the DeviceMsg.cfg configuration file [...]</p> <p>For example, Flash MX Professional 2004 is software. See disclosures for claim limitation 15[a] (hereby incorporated by reference). In software, instructions to display the representations are stored in at least one of a file, a database, and on computer-readable media that is accessible via the internet.</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

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<p>29[a] The medium of claim 15, wherein at least one of the one or more characteristics are stored on at least one of a file, a database and on a computer-readable media that is accessible via the internet.</p>	<p>The Flash MX Professional 2004 system discloses this limitation.</p> <p>For example, Flash MX Professional 2004 applications in development are stored in files. These files contain all of the application's settings and therefore at least one of the one or more characteristics, such as screen size and Flash Player version.</p> <p>[<i>Flash MX 2004 Using Flash</i>, p. 41]</p> <p>In Macromedia Flash MX Professional 2004, you can use Flash Projects to manage multiple document files in a single project. Flash Projects allow you to group multiple, related files together to create complex applications. [¶]</p> <p>You can use version-control features with projects to ensure that the correct file versions are used during editing, and to prevent accidental overwriting. To use version control, you must first add files to a project. For information on version control, see "Using version control with projects (Flash Professional only)" on page 45. [¶]</p> <p>Flash Projects include the following features:</p> <ul style="list-style-type: none"> • A Flash Project can contain any Flash or other file type, including previous versions of FLA and SWF files. • You can add an existing file to a Flash Project. Each file can be added to a particular Flash Project only once. Files can be organized in nested folders. • A Flash Project is an XML file with the file extension .flp—for example, myProject.flp. The XML file references all the document files contained in the Flash Project. • A Flash Project can contain another Flash Project (FLP file). • Changes that you make to a project are updated to the FLP file immediately, so the file is always current. (You do not need to do a Save File operation.) • You can create a Flash Project in the Flash MX Professional 2004 authoring environment, or you can create the XML file for a Flash Project in an external application <p>[<i>Flash MX 2004 Using Flash</i>, pp. 295 – 296]</p> <p>You can create a publish profile that saves a configuration of publish settings. You can then export the publish profile for use in other documents, or for use by others. Conversely, you can import publish profiles for use in your document. [...]</p>

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	<p>Publish profiles, like default publish settings, are saved at the document rather than application level. To use a publish profile in another document, you export it, then import it into the other file. [...]</p> <p>To modify a publish profile, you simply change the settings in the Publish Settings dialog box.</p> <p>For example, the Flash Lite 1.1 characteristic is stored on a file.</p> <p>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, p. 7] To create content for mobile phones, you must have the following items on your computer:</p> <ul style="list-style-type: none"> • The latest version of Macromedia Flash MX Professional 2004 (7.0.1) • The new FlashLite1_1.dll (FlashLite1_1.dmg on the Mac) file for testing Flash applications in the Flash Lite 1.1 authoring environment • The new FlashLite1_1.xml file for publishing Flash Lite 1.1 SWF files • The DevicesMsg.cfg configuration file for customizing the features that are supported in Flash Lite 1.1. <p>For example, Flash MX Professional 2004 is software comprising files because it is installed on the user's computer.</p> <p>[Flash MX 2004 Using Flash, p. 178] You can install the FLV Export plug-in after installation of Flash MX Professional 2004 is complete.</p> <p>[Flash MX 2004 Getting Started with Flash, p. 16] Installing and activating Flash [¶] Installing Flash is an automated process. After installation, you can choose to run the 30-day trial mode of Flash, or you can choose to activate either Flash MX 2004 or Flash MX 2004 Professional. Both editions of Flash must be activated over the Internet or phone prior to use, and you need your serial number to activate either edition of Flash unless you want to select trial mode. Windows 98 SE users must have Microsoft Internet Explorer 5.1 or later in order to activate over the Internet. [¶] Note:</p>

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	<p>Installing Macromedia Flash MX 2004 and Macromedia Flash MX Professional 2004 does not overwrite earlier Flash versions, such as Macromedia Flash MX, that you might have installed. [¶]</p> <p>To install Flash: [¶] 1. Close any running versions of Flash before installing. [¶] 2. Do one of the following to start the installation process: ■ (Windows) If you have a CD, insert it in your CD drive. A Flash movie clip plays that guides you through installation choices. Note: You can also run Install Flash MX 2004.exe to start the Flash movie clip, if necessary. ■ (Macintosh) If you have a CD, insert it in your CD drive and double-click the Installer icon. ■ If you have downloaded Flash from the Internet, double-click FlashMX2004Installer.exe (Windows), or double-click the Installer icon (Macintosh) and follow the onscreen instructions. [¶] 3. When installation is complete, follow the instructions to select the 30-day trial period, or enter your serial number and activate Flash.</p> <p>[Flash MX Professional 2004 Flash Lite 1.1 Authoring Guidelines, pp. 7–8]</p> <p>To create content for mobile phones, you must have the following items on your computer: [¶] • The latest version of Macromedia Flash MX Professional 2004 (7.0.1) [¶] • The new FlashLite1_1.dll (FlashLite1_1.dmg on the Mac) file for testing Flash applications in the Flash Lite 1.1 authoring environment [¶] • The new FlashLite1_1.xml file for publishing Flash Lite 1.1 SWF files [¶] • The DevicesMsg.cfg configuration file for customizing the features that are supported in Flash Lite 1.1. [¶]</p> <p>Installing the Flash MX Professional 2004 7.0.1 update [¶] To export Flash Lite 1.1 contents for mobile phones correctly, you need to have the latest version of Macromedia Flash MX Professional 2004 (7.0.1). You can download the updater program from the Macromedia website: www.macromedia.com/support/flash/downloads.html. [¶]</p> <p>Installing the FlashLite1_1.dll (FlashLite1_1.dmg on the Mac) file [¶] The FlashLite1_1.dll (FlashLite1_1 on the Mac) file is part of the Flash Lite 1.1 Authoring Updater. This DLL is to be used to test content when you select Test Movie to validate your content. This new DLL is used when Flash Lite 1.1 is selected as the Flash version to publish to (using the publish setting interface). [...]</p> <p>The Flash Lite 1.1 Test Movie command allows users to customize the features that are supported in Flash Player. From the Flash Lite 1.1 Authoring Updater, copy the DeviceMsg.cfg configuration file [...]</p>

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	<p>For example, Flash MX Professional 2004 is software. See disclosures for claim limitation 15[a] (hereby incorporated by reference). In software, at least one of the one or more characteristics are stored on at least one of a file, a database and on a computer-readable media that is accessible via the internet.</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

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33[a] The medium of claim 15, wherein the instructions allow scripts to be created that simulate actions capable of being performed by the mobile device.

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The Flash MX Professional 2004 system discloses this limitation.

Screenshot of Flash MX Professional 2004 Bandwidth Profiler interface with “Actions – Frame” window enabling creating ActionScript scripts within the Flash application.

For example, the manual discloses that Flash MX Professional 2004 supports creating ActionScript (scripts).

[Flash MX 2004 Using Flash, p. 23]

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	<p>Working with scenes [¶] To organize a document thematically, you can use scenes. For example, you might use separate scenes for an introduction, a loading message, and credits. [¶] Note: You cannot use scenes in a screen-based document. For information on screens, see Chapter 12, “Working with Screens (Flash Professional Only),” on page 197. [¶]</p> <p>When you publish a Flash document that contains more than one scene, the scenes in the document play back in the order they are listed in the Scene panel in the Flash document. Frames in the document are numbered consecutively through scenes. For example, if a document contains two scenes with ten frames each, the frames in Scene 2 are numbered 11–20. [¶]</p> <p>You can add, delete, duplicate, rename, and change the order of scenes. [¶]</p> <p>To stop or pause a document after each scene, or to let users navigate the document in a nonlinear fashion, you use actions. See “ActionScript Basics” in ActionScript Reference Guide Help. [¶]</p> <p>To display the Scene panel:</p> <ul style="list-style-type: none"> • Select Window > Design Panels > Scene. [¶] <p>To view a particular scene:</p> <ul style="list-style-type: none"> • Select View > Go To and then select the name of the scene from the submenu. [¶] <p>To add a scene, do one of the following:</p> <ul style="list-style-type: none"> • Click the Add Scene button in the Scene panel. • Select Insert > Scene. <p>ActionScript adds complex interactivity, playback control, and data display, and can store and retrieve information, and thereby can simulate actions capable of being performed by the mobile device. ActionScript also has networking capabilities, such as by calling loadMovie and getUrl, which also simulate actions capable of being performed by the mobile device.</p>

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	<p>[<i>Flash MX 2004 Using Flash</i>, p. 18] ActionScript is the Flash scripting language that enables you to add complex interactivity, playback control, and data display to a Flash document. You can add ActionScript within the Flash authoring environment using the Actions panel, or create external ActionScript files using an external editor. [¶]</p> <p>You don't need to understand every ActionScript element to begin scripting; if you have a clear goal, you can start building scripts with simple actions. You can incorporate new elements of the language as you learn them to accomplish more complicated tasks. [¶]</p> <p>Like other scripting languages, ActionScript follows its own rules of syntax, reserves keywords, provides operators, and allows you to use variables to store and retrieve information. ActionScript includes built-in objects and functions and allows you to create your own objects and functions. For more information on ActionScript, see "ActionScript Basics" in ActionScript Reference Guide Help.</p> <p>[<i>Flash MX 2004 Using Flash</i>, p. 38] When external SWF files, GIF and XML files, and variables are streamed into a player by using ActionScript calls such as loadMovie and getUrl, the data flows at the rate set for streaming. The stream rate for the main SWF file is reduced based on the reduction of bandwidth caused by the additional data requests.</p> <p>As another example, the Bandwidth Profiler can run a scripted simulation of a download, thereby creating a script to simulate actions capable of being performed by the mobile device.</p> <p>[<i>Flash MX 2004 Using Flash</i>, pp. 38–39] The Flash Player attempts to meet the frame rate you set; the actual frame rate during playback can vary on different computers. If a document that is downloading reaches a particular frame before the frame's required data has downloaded, the document pauses until the data arrives. [¶]</p> <p>To view downloading performance graphically, you can use the Bandwidth Profiler, which shows how much data is sent for each frame according to the modem speed you specify. The Bandwidth Profiler is divided into</p>

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	<p>two panes. The left pane shows information about the document, the download settings, the state, and streams, if any are included. The right pane shows information about individual frames in the document. [¶]</p> <p>In simulating the downloading speed, Flash uses estimates of typical Internet performance, not the exact modem speed. For example, if you choose to simulate a modem speed of 28.8 Kbps, Flash sets the actual rate to 2.3 Kbps to reflect typical Internet performance. The profiler also compensates for the added compression support for SWF files, which reduces the file size and improves streaming performance. [¶]</p> <p>When external SWF files, GIF and XML files, and variables are streamed into a player by using ActionScript calls such as loadMovie and getUrl, the data flows at the rate set for streaming. The stream rate for the main SWF file is reduced based on the reduction of bandwidth caused by the additional data requests. It's helpful to test your document at each speed you intend to support, and on each computer you intend to support. This helps you ensure that the document doesn't overburden the slowest connection and computer it is designed for. [¶]</p> <p>You can also generate a report of frames that are slowing playback, and then optimize or eliminate some of the content in those frames. See "Optimizing Flash documents" on page 36. [¶]</p> <p>To change the settings for the SWF file created using the Test Movie and Test Scene commands, use File > Publish Settings. See "Publishing Flash documents" on page 281. [¶]</p> <p>To test download performance: [¶] Do one of the following: [¶] Select Control > Test Scene or Control > Test Movie. [¶] If you test a scene or document, Flash publishes the current selection as a SWF file using the settings in the Publish Settings dialog box. (See "Publishing Flash documents" on page 281.) The SWF file opens in a new window and begins playing immediately. [¶] Select File > Open, and select a SWF file. [¶]</p> <p>Select View > Download Settings, and select a download speed to determine the streaming rate that Flash simulates: 14.4 Kbps, 28.8 Kbps, 56 Kbps, DSL, T1 or a User Setting. To enter your own User Setting, select Customize. [¶]</p> <p>When viewing the SWF file, select View > Bandwidth Profiler to display a graph of the downloading performance. [¶] The left side of the profiler displays information about the document, its settings, its state,</p>

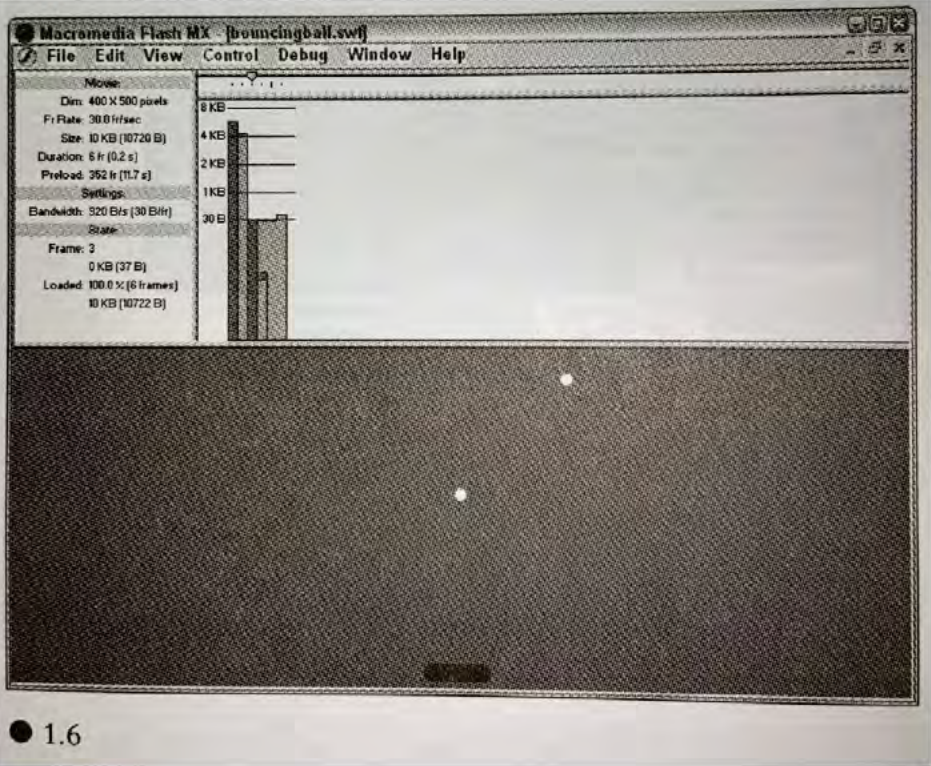
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	<p>and streams, if any are included in the document. ¶ The right section of the profiler shows the Timeline header and graph. In the graph, each bar represents an individual frame of the document. The size of the bar corresponds to that frame's size in bytes. The red line beneath the Timeline header indicates whether a given frame streams in real time with the current modem speed set in the Control menu. If a bar extends above the red line, the document must wait for that frame to load. ¶</p> <p>Select View > Simulate Download to turn streaming off or on. ¶ If you turn streaming off, the document starts over without simulating a web connection. ¶</p> <p>Click a bar on the graph to display settings for the corresponding frame in the left window and stop the document. ¶</p> <p>If necessary, adjust the view of the graph: ¶ Select View > Streaming Graph to show which frames cause pauses. This default view displays alternating light and dark gray blocks representing each frame. The side of each block indicates its relative byte size. The first frame stores a symbol's contents, so it is often larger than other frames. ¶ Select View > Frame by Frame Graph to display the size of each frame. This view helps you see which frames contribute to streaming delays. If any frame block extends above the red line in the graph, the Flash Player halts playback until the entire frame downloads. ¶</p> <p>Close the test window to return to the normal authoring environment. ¶ Once you've set up a test environment incorporating the Bandwidth Profiler, you can open any SWF file directly in test mode. The file opens in a Flash Player window, using the Bandwidth Profiler and other selected viewing options. ¶ For more information on debugging your documents, see "Writing and Debugging Scripts" in ActionScript Reference Guide Help. ¶</p> <p>To generate a report listing the amount of data in the final Flash Player file: ¶ Select File > Publish Settings and click the Flash tab. ¶ Select Generate Size Report. ¶ Click Publish. ¶</p> <p>Flash generates a text file with the extension .txt. (If the document file is myMovie.fla, the text file is myMovie.Report.txt.) The report lists the size of each frame, shape, text, sound, video and ActionScript script by frame.</p>

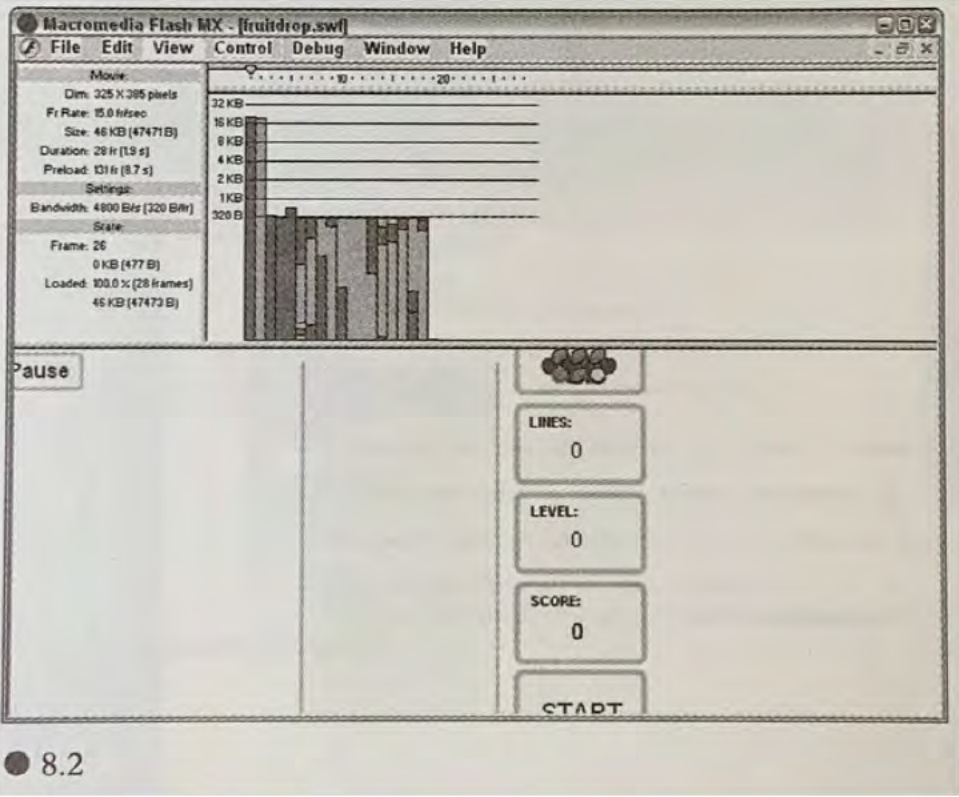
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	<p data-bbox="380 604 751 632">[Flash MX 2004 Using Flash, p. 390]</p> <p data-bbox="380 632 1442 716">In addition, Flash files are compact, making them perfect for wireless carrier networks, where transfer rates range between 9.6 and 60 kilobytes per second (Kbps). Mobile devices, unlike desktop computers, have limited storage capability, so the small footprint of Flash is ideal.</p> <p data-bbox="380 800 1122 827">David discloses, via screenshots, the appearance of the Bandwidth Profiler.</p> <p data-bbox="380 856 505 884">[David, p. 7]</p>

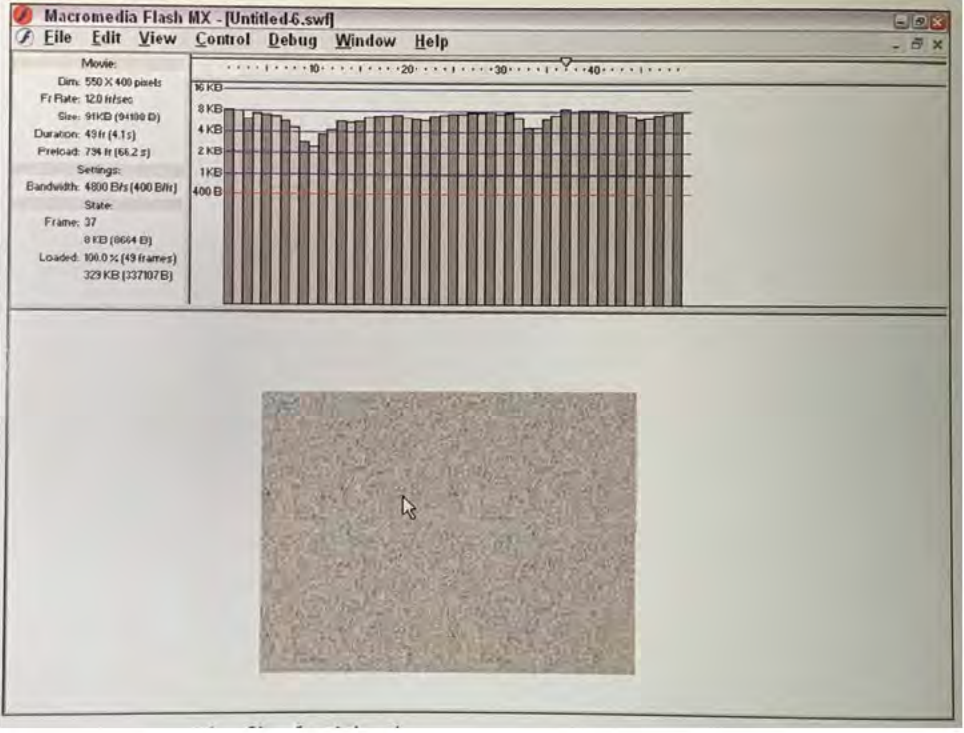
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	<div><p>● 1.6</p><p>[David, p. 98]</p></div>

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	 <p>● 8.2</p> <p>[David, #18 of 32 unnumbered pages between pages numbered 192 and 193]</p>

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*579 Claim 33	Reference/Combination
	 <p>The screenshot shows the Macromedia Flash MX Professional 2004 interface. The top menu bar includes File, Edit, View, Control, Debug, Window, and Help. Below the menu is a timeline with a playhead at 40 seconds. The left panel displays movie properties: Dimensions: 550 X 400 pixels, Frame Rate: 12.0 fps, Size: 911KB (94100 B), Duration: 49 fr (4.1 s), Preload: 734 fr (68.2 s), Settings: Bandwidth: 4800 B/s (400 B/fr), State: Frame: 37, 0 KB (0664 B), Loaded: 100.0 % (49 frames), 329 KB (327707 B). The main canvas shows a video player with a textured background and a mouse cursor.</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>

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'579 Claim 33	Reference/Combination

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*579 Claim 34	Reference/Combination
34[a] The medium of claim 33, wherein the scripts can be modified or recorded.	<p>The Flash MX Professional 2004 system discloses this limitation.</p> <p>See claim limitation 33[a] (hereby incorporated by reference). For example, the manual discloses that ActionScript scripts can be modified.</p> <p>To the extent this limitation is not explicitly disclosed by the Flash MX Professional 2004 system, it is inherent or would have been obvious to a POSA from the teachings of the Flash MX Professional 2004 system, the knowledge of a POSA, and/or one or more of the references identified in JPMC's Invalidity Contentions.</p>